The Active Window

December 1989

. . . not even a mouse.

Features

Departments

Products Used to Create This Issue

Hardware: Apple Macintosh computers, LaserWriter NTX, Scanner; AST 286 (bbs); Iomega Bernoulli Box II 44.

Software: Adobe fonts; Excel 2.2; FreeHand 2.02; LetrTuck 1.05; Illustrator 88 1.8.3; MacPaint II; MacWrite II; Microphone II; Nisus 1.01; PageMaker 3.02; PPA/Adobe screen fonts; QuarkXPress 2.12; Red Ryder 10.3; SuperPaint 2.0; The Bread Board System; TOPS 2.1; Word 3.02 & 4.0.

Utilities: Adobe Type Manager1.01; DeskDraw 1.3; DeskPaint 2.01; Disinfectant 1.2; DiskTop 3.01; LaserStatus 3.0; QuickKeys 1.2; ShortCut 1.0; Silver Lining 5.13; SnapJot 1.0; SnapShot 1.1; Stuffit 1.51; Suitcase II 1.23; Virex 2.0.

The Active Window

BCS•Mac Magazine
The Boston Computer Society

Editorial Staff

Editor Sam Hunting
Managing Editor Lee LeCuyer
Magazine Designer Lowell Halvorson
Editors Jeanne Marie Childe, Pam DiStefano, Caroline Freeman
Contributing Editors Jon Carpenter, Brian DeLacey, David Drucker, Glenn Hoffman, Jim Leitner, Gene Rossitch
Social Secretary Charles Schafer
Help Lines Bill Carolan (contact); Minna Levine (data base)
Staff Writers Gerry DiBello, Andy Ihnatko, Sandra Moore, Candace Van Auken
Cover Art, Table of Contents Catherine Fitzgerald

Director of Publications Caroline Freeman

Production Staff

Production Editor Sam Hunting
Production Manager Lee LeCuyer
Art Director Position Open
Production Staff Joyce Bezdek, Ralph Buglass, Stephen Fish

SOMERVILLE—The Boston Computer Society Macintosh Users' Group proudly recognizes

Andy Ihnatko

for his writings in *The Active Window*. As consumer affairs editor, Andy broke the story of the 512K Mac recall, going under cover to avoid the brickbats of the Apple Legal department. Andy has revealed himself to be a friend of the user and enemy of stodginess and complacency.

We hereby confer upon him the title of

Way Cool Dude

Your face here!

BCS•Mac Office

48 Grove Street
Somerville, MA 02144

Office Manager Nancy Jean Tarner
Public Domain Coordinator Joy Steinberg
Voice Line (617) 625-7080
BCS•Mac BBS (617) 625-6747 [1200–2400]
BCS Main BBS (617) 227-7986

Active Window Advertising

BCS•Mac Group Directors

Executive Director	Jim Leitner	(h) (617) 731-3056
Meetings	Michael Costello	(w) (603) 643-8561
Treasurer	Martin Dalgleish	(h) (617) 489-3422
PD Software	Jon Carpenter	(h) (617) 893-1940
Industry Relations	Position Open	
Volunteer Contact	Glenn Hoffman	(w) (617) 288-9664
Education	David Drucker	(h) (617) 876-1505
Publications	Caroline Freeman	(h) (617) 625-7123
Online Services	Jim Leitner	(h) (617) 731-3056
Satellites	Mark Fleiger	(401) 331-5249

Former Executive Directors Jack Hodgson, Becky Waring, Rob Hafer, Brian DeLacey

Subgroup & Satellite Meeting Leaders

Business Group	Hal Wells	(w) (617) 237-0439
	Tom Stone	(w) (617) 576-0758
Database Group	Rich Coulombre	(w) (617) 472-2870
	Rich Kollmeyer	
Design Group	Conrad Willeman	(h) (508) 468-7250
	Tim Johnson	
Legal Group	Harley Hiestand	(e) (617) 235-8718
	Ned Watts	
Medical Group	Scott Finley	(h) (508) 875-8704
TechGrp	Maynard Chen	(h) (617) 492-7463
	Owen Hartnett	(h) (401) 624-2705
	Clem Wang	
HyperCard Group	David Drucker	(w) (617) 625-7080
MacMetroWest	Valerie Knotts	(w) (508) 872-4301
	Bob Gagnon	(w) (617) 326-7815 x242
MacMinuteman	Lindsey Anderson	(508) 371-3056
Manchester, NH	Bruce Kinsey	(h) (603) 497-4484
	Diane Romagnoli	
Martha's Vineyard	Edward Lopac	(h) (508) 627-8529
Nashoba Valley	Bob Uliss	(w) (617) 449-2000 x3059
Portsmouth, NH	Cynthia Harriman	(h) (603) 436-1608
South Shore	Cheryl McKeary	(w) (617) 585-8674
Rhode Island	Mark Fleiger	(401) 331-5249

Bill Carolan/Minna Levine

Dial Help is a *FREE* service. If you are asked to pay for answers, please contact Bill Carolan at the number below and the list will grow shorter. Please limit your calls to the hours indicated below. "(e)" means evenings from 6 to 9:30 pm. If you are calling from your company, leave the best time and day to get back to you; if you are calling long distance, allow the volunteer to call you back collect.

Please note that BCS cannot offer help if you do not have a manual and a legal copy of the software that you need help with.

Can we add your name to this list? Do you have an area of expertise on the Mac? Call Bill Carolan, (617) 431-7496, 9 am–9 pm, M–F.

Dial Help is a free service. If you are asked to pay for answers, please contact Bill Carolan at the number below and the list will grow shorter.

Please limit your calls to the hours indicated below. "(e)" means evenings from 6 to 9:30 pm. If you are calling from your company, leave the best time and day to get back to you; if you are calling long distance, allow the volunteer to call you back collect.

4th Dimension

Alan Schlingenbaum	(617) 235-7506	(10 am–7 pm)
Robert Murray	(617) 253-0683	
Dave Tenen	(508) 537-6234	
Peter Kussell	(e) (617) 821-6324	
Tony Collins	262-5591	

Accounting Software

Tom Price	(508) 532-0762

Adobe Illustrator

Judy Barolak	(617) 646-9099	(3–10 pm)
Chris Lombardi	(617) 491-7052	
Bill Tupper	(e) (508) 777-5759	
David Spound	(d) (617) 923-4663	

Beginners

Bob Sparling	(d/e)(617) 661-6571
Ruth Carter	(617) 484-1404
Rod Cleaves	(d/e)(508) 897-1845
	(e) (508) 897-8877
Scott Doran	(e) (617) 245-3270
Glenn Koenig	(617) 646-7708
Gillian Newson	(619) 298-5525 (CA)
Ron Raymond	(617) 489-5137 (2–10 pm)
Lee LeGuyer	(617) 666-9074
Ruth Levitsky	(d) (617) 738-2109
	(e) (617) 479-8040
Wes Schaal	(617) 494-1438
Farokh Lam	(e) (617) 489-4589
Steve Harrad	(203) 527-2799 (Hartford, CT)

Canvas

Mike Rockot	(e) (508) 462-0370

CAT

Nancy Upper	(617) 721-2340

Claris Cad

Tony Schettino	(617) 577-2063

Connectivity to IBM Mainframes & Minis

Mark Nelson	(d) (617) 495-9450

Cricket Draw

Rod Cleaves	(d/e)(508) 897-1845
	(d/e)(508) 897-8877

dBase Mac

Mike Klusek	(d) (617) 720-6811
	(e) (617) 923-1119

Desktop Mapping

Peter Nelson	(617) 662-0601

Desktop Publishing

position open

Double Helix II

Gordie Sands	(e) (617) 784-7419
	(d) (617) 821-2800 x 3336
Mike Klusek	(d) (617) 720-6811
	(e) (617) 923-1119
Marvin Berman	(508) 535-9035
	(508) 535-4427

Excel

Martin Dalgleish	(617) 489-3422
Bill Dodson	(617) 646-8799 (9 am–5 pm, M–F)
Glenn Koenig	(617) 646-7708
Chris Lombardi	(617) 491-7052
Hal Wells	(617) 237-0439
Lynn Wegley	(404) 559-6927
Jonathon Hill	(617) 331-3366
Gordie Sands	(e) (617) 784-7419
	(d) (617) 821-2800 x 3336

FAX

James Baker	(617) 595-0684

Filemaker II

Bill Dodson	(617) 646-8799 (9 am–5 pm, M–F)
Rod Cleaves	(d/e)(508) 897-1845
	(d/e)(508) 897-8877
Gerry DiBello	(508) 692-9137
Glenn Koenig	(617) 646-7708
Tony Jackson	(e) (617) 926-4006
Tom Price	(508) 532-0762
Gordie Sands	(e) (617) 784-7419
	(d) (617) 821-2800 x 3336
Ellen Sinott	(d/e)(617) 326-1064
Peter Storkerson	(508) 358-2254

Fonts

Jim Weinrich	(d) (619) 215-8553 (CA)

Format Conversions

James Baker	(617) 595-0684
Rod Cleaves	(d/e)(508) 897-1845
	(d/e)(508) 897-8877
Roy Mallet	(d) (508) 937-0999

FoxBase+/Mac

Bill Dodson	(617) 646-8799 (9 am–5 pm, M–F)
Tom Price	(508) 532-0762

FreeHand

Scott Murray	(508) 251-3546
Sean Morrison	(617) 749-5357
Chris Lombardi	(617) 491-7052
Phil Oliver	(617) 545-4883

FullPaint

Tony Schettino	(617) 577-2063
Anna Greaves	(d) (508) 858-4945

FullWrite Professional

Miguel Marcos	(212) 666-0193 (NY)

General Help

Bill Allred	(301) 321-5925 (D.C.)
Tony Schettino	(617) 577-2063
Patrick Woolsey	(617) 647-4825

Great Plains

Sue Bernier	(d) (617) 662-06011

HyperAction

John Droz Jr.	(d/e)(315) 348-8428 (nr. Utica, NY)

HyperCard

Earl Christie	(617) 438-9420
David Drucker	(617) 876-1505
Gordie Sands	(e) (617) 784-7419
	(d) (617) 821-2800 x 3336
Tony Schettino	(617) 577-2063
Mark Steingesser	(617) 395-3262 (e)

Bill Carolan/Minna Levine
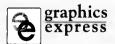
Insight
Sue Bernier — (d) (617) 662-0601

Investment Software
Hal Wells — (d/e)(617) 237-0439

Lightspeed C
Anna Greaves — (d) (508) 858-4945

Mac II
Dave Titus — (617) 884-2026

Mac 3D
John Goodman — (617) 876-2210 (10 am—10 pm)

MacBillboard
position open

Mac Group Board
Dan Crawford — (d) (508) 759-8561

MacDraft
Mike Rocicot — (e) (508) 462-0370
Anna Greaves — (d) (508) 858-4945

MacDraw
Gerry DiBello — (508) 692-9137
Pete Lozeau — (d) (413) 539-9811 x 342
— (e) (413) 323-5745
Tony Schettino — (617) 577-2063

MacProject II
David Spound — (d) (617) 923-4663

Microphone II
position open

Microsoft Word
P.A.M. Borys — (d/e)(617) 935-0141
Bill Davies — (916) 443-0270 (CA)
Glenn Koenig — (617) 646-7708
Phil Marshall — (h) (617) 277-5391
Tony Jackson — (e) (617) 926-4006
Jonathon Hill — (617) 331-3366

Microsoft Works
Bill Carolan — (617) 431-7496 (Beginner)
Wally Parker — (503) 342-4063 (OR)

Modems
position open

More II
Bob Uliss — (d) (617) 449-2000 x 3059
Bob Chin — (e) (508) 877-0195
— (d) (617) 273-9500

Music/Midi
Steve Paha — (617) 262-7499
Robert Adams — (508) 695-4972

Networking/Mail
position open

Neural Nets
T. J. Schwartz — (415) 965-4561 (CA)

Omnis 5
John Phillips — (617) 893-5759
Ron Sweet — (617) 863-2775

OverVue
position open

PageMaker
Judy Borolak — (617) 646-9099 (3–10 pm)
Lois Bennett — (716) 427-7065
Rod Cleaves — (d/e)(508) 897-1845
— (d/e)(508) 897-8877
David Spound — (d) (617) 923-4663
Ruth Lovitsky — (d) (617) 738-2109
— (e) (617) 479-8040

Panorama
Bill Dodson — (617) 646-8799 (9 am—5 pm, M–F)
Cyrus D'Amato — (203) 972-0641 (CT)

PhoneNet
Peter Nelson — (d) (617) 662-0601

PostScript
Danny Kumamoto — (e) (617) 547-5033

PowerPoint
Hal Wells — (617) 237-0439

Public Domain
Jonathan Carpenter — (617) 893-1940

Quark XPress
Bill Tupper — (e) (508) 777-5759
Lee LeCuyer — (617) 666-9074

Ready,Set,Go! 4
Alice Cream — (d) (508) 470-1080
— (e) (508) 458-9511
Mary Hargrave — (617) 554-0727

Reflex
Bill Davies — (916) 443-0270 (CA)

Reflex Plus
Richard Pomeroy — (617) 749-3818
Bill Isham — (617) 266-0486
Jonathon Hill — (617) 331-3366

Scanning
James Baker — (617) 595-0684
Roy Maillet — (d) (508) 937-0999

Simulation Software
Ernst Diehl — (617) 494-8741

Statistical Software
Minna Levine — (617) 484-2659

StatView series
Bill Isham — (617) 266-0486

SuperPaint
P.A.M. Borys — (d/e) — (617) 935-0141
Anna Greaves — (d) (508) 858-4945

Systems & Utilities
David Alfred — (617) 661-9046 (M–F 9–5)
Patrick Woolsey — (617) 647-4825
Gordie Sands — (e) (617) 784-7419
— (d) (617) 821-2800 x 3336
Ron Sweet — (617) 863-2775

TBBS
position open

Telecommunications
James Burley — (d/e)(508) 881-6087
Daniel Zimmerman — (d) (617) 876-7966
— (e) (617) 623-6009

TOPS
Glenn Hoffman — (617) 288-9664

VideoWorks
Bob Judd — (608) 926-8211 (3:30–5 pm, M–F)
Doug Cramer — (d) (508) 671-0888
— (e) (617) 868-3727

Viruses
Glenn Hoffman — (617) 288-9664

Word Processing
Ellen Sinett — (d/e)(617) 326-1064

Wingz
Bill Dodson — (617) 646-8799 (9 am—5 pm, M–F)

WordPerfect
Marcie Morrision — (617) 629-2749

WriteNow
Craig O'Donnell — (617) 232-3053
Tony Schettino — (617) 577-2063

INSIDE BCS•MAC

Brian DeLacey, Jim Leitner

Brian DeLacey
Outgoing Executive Director

With a great deal of pleasure I announce Jim Leitner's election to the position of Executive Director of BCS•Mac. Jim took office November 1.

Jim's demonstrated success with the BCS•Mac multi-line bulletin board system reflects his experience and skill at managing activities and large groups of people. Further, in his role as chair of the BCS•Mac Committee of the Future, Jim has shown his concern for the structure and organizational longevity of BCS•Mac. I feel confident that Jim will carry the group forward from its existing position of strength to a position of even greater strength.

In addition to Jim's election to his new role, Caroline Freeman was recently elected to the role of Director of Publications and Mark Flieger to the position of Director of Satellite Groups. Caroline has been active in a variety of BCS•Mac activities: in particular, she has become a cornerstone of *The Active Window* and the Software Exchange Catalog. Mark joins the BCS•Mac Board of Directors as an experienced leader of BCS•Mac's Rhode Island group.

Gerry Lukos, Director of Publications for more than a year, has decided to relocate to the northwestern part of the United States. Gerry has truly been a long-time, wide ranging contributor to the BCS. Whether it was disk-duplicating parties or Macworld Expo booth duties, Gerry could always be counted on to pitch in and help out. Always a pleasure to work with, Gerry—her friendly face and hard work—will be missed by the group.

I have greatly enjoyed my active involvement in BCS•Mac. My decision not to seek re-election (elections are held every six months) didn't come easily.

Any second thoughts about my decision not to run for re-election disappeared when my wife and I received opened fortune cookies at a local Chinese restaurant. My fortune read, "By next month, your added responsibilities will be alleviated." My wife's read, "When time permits, your personal life will be exciting." I felt reassured.

My thanks go to the many volunteers, activists, staff, and members who have helped make my tenure as BCS•Mac's Executive Director a personally rewarding experience: the group's success is your success. In addition, I'd like to thank my employer, Lotus Development Corp., for its ongoing support of user-group activities. Most importantly, I'd like to thank my wife, Lynn, whose patience and support have long been the hidden pillars of my BCS•Mac involvement.

It has been an honor and a pleasure to serve in my elective and appointive roles within BCS•Mac. I look forward to retiring to the most unassuming, yet unlimiting, of all the roles in our group: BCS•Mac member.

Copyright © 1989, The Boston Computer Society Mac Group

Jim Leitner
Incoming Executive Director

In his column which is companion to this, Brian DeLacey alluded to my work on the Futures Committee—a reference which needs a bit of explaining and a lead-in that provides me an opportunity to let you know what has been going on.

Last August, faced with the possibility of the BCS Center's becoming a reality within a year and a half, the BCS•Mac Board of Directors asked me to head a group that would plan our future in the near term and during the development of the new center.

The Mac office is the site of our seminars and the place we keep our BBS equipment, produce the Software Exchange Library and publish *The Active Window*. The Mac office is essentially an office, not a drop-in center for members, except on special occasions. It is not large enough to serve the latter purpose. But the people who work there, Mac activists, have made it into something more which we would like to preserve.

Perhaps the following excerpts from the program for the BCS Center which the BCS•Mac Futures Committee pro-

duced will demonstrate what we are striving to maintain as we plan our change of location.

• We want the space to physically and architecturally reflect our own organizational identity under the BCS umbrella. There are issues of culture and comradeship that we have developed and enjoy and want to maintain. Therefore, we need some exclusive spaces but want to avoid offense to smaller BCS groups simply because we are larger.

• We want to maintain a working office for Mac activists to conduct the business of our group and accomplish services for our members, as distinct from a Mac center with resources for all members. The BCS Center as a whole should fulfill this.

• We would like to occupy some spaces with, by, or near other activists and we see the gathering of BCS user groups in a common area as beneficial.

• We would particularly like to share some areas in common or be physically located near the BCS IBM/PC group.

I want to begin my work as Executive Director with a call for volunteers with the management skills and experience to handle a number of discrete projects (those with a beginning and an end). If you have this kind of experience, you will know who you are. You should know that we have vast resources needing to be put on and kept on track.

If you have this kind of experience, you will also know that we will try to get you involved beyond those discrete projects.

Lastly, if you get involved and we ask you to get involved further, you should know that I know how to take no for an answer.

Just because you are not in the Boston area, you should not feel excluded. We can think of all sorts of things that need your help! Contact me on the Mac BBS at (617) 625-6747, at the Mac office at (617) 625-7080, or on my answering machine at (617) 731-3056.

Copyright © 1989, The Boston Computer Society Mac Group

Picture yourself at MACWORLD Expo

There are [🎲] good reasons why you should attend the MACWORLD Expo nearest you. First, attending MACWORLD Expo means you don't have to spend lots of [🕐] and [💰$] trying to find the best solutions to your computing problems. Second, you can [👁][👁] and [👆] the latest Macintosh products . . . demo hundreds of hardware, software and peripheral exhibits representing the future of [💻] computing. Third, whether you use your [🖥] in the [🏢] , at [🏠] or at [⛪] you'll learn how to use it better. Fourth, if you develop, produce or sell [💻] products, you'll have a unique opportunity to spot upcoming [📈] . And fifth, you'll be able to [✏️] your skills, using one of the many [💻] [💻] available, to practice what you've learned. So [✂️] the coupon below, [✂️] and [📮] it for more information. And [👆] this is the original Macintosh-exclusive show. Choose from these upcoming shows:

SAN FRANCISCO '90
April 11-13, 1990
Moscone Center
Brooks Hall/Civic Auditorium

BOSTON '90
August 9-11, 1990
Bayside Expo Center
World Trade Center

Just fill in below, clip and mail to: MACWORLD Expo, Mitch Hall Associates, 260 Milton St., Dedham, MA 02026.
You'll receive complete information on each show as soon as it's available. No obligation of course.

I want to get the big picture.

I am interested in: ❏ Attending ❏ Exhibiting

Please send me details about the following MACWORLD Expos:

❏ **San Francisco** April 11-13, 1990 ❏ **Boston** August 9-11, 1990

Name _____ Title _____

Company _____ Street _____

City/State/Zip _____ Phone _____

MACWORLD EXPOSITION

"Angels we have heard on high telling us go out and buy."

—Stan Freberg, *"Green Christmas"*

"It's better to burn out than fade away."

—Neil Young, *Rust Never Sleeps*

SOMERVILLE—Yes! We managed to put together a Christmas issue of *The Active Window* without a single clip-art Santa—indeed, with not even a single kitschy artifact or mention of that vestigially pagan now-discredited Victorian novelty item of a holiday.

O solstice mio

Nevertheless, we have managed to cover a topic dear to the hearts and wallets of those who expect to find things under the tree: hardware. Data Buckets™, tiny hard disks, huge hard disks, uninterruptible power supplies, and an upgrade path for the Plus.

New hope for the Plus?

I don't know about hardware, but I know what I like. Speed and cheapness, that's what I want—after all, that's why I bought a Plus in the first place, right? Lately my virtual SE (the Plus with Dove battery-door SCSI port, 2 megs, and heat problems) had started to feel slow. But when I looked at what it would cost to get a second Mac, I felt poor. Surely there was a way to circumvent Apple's monopoly pricing by upgrading my Plus so it would be as fast as a II or an SE/30?

The answer, in the form of the Gemini/030 card, was yes. I got the top of the line model and 4 megs of RAM, while trading in my Dove board, for around $1800: a Macworld special, still pricey, but not so pricey as a new machine. The features and options of the Gemini board are: choice of '020 or '030 CPU (I got the '030, at 20 MHz), math co-processor, space for 4 megs of RAM, SCSI

interface, large screen adapter (works with cards for an E-Machines Big Picture or a MegaGraphics MegaScreen), and a massive squirrel-cage fan with mounting bracket. And the GEMstart init that makes the board work. Hardware nerds say that the board is well made: gold-socketed, and so on.

Does it work? Why does it work?

Over two months, the Gemini '030 board has worked flawlessly for me. My Plus is now faster than a II. In fact, a IIcx feels a bit slow. (I am comparing my upgraded Plus to several machines available to me, which are configured not outlandishly but inconsistently.) Best of all, the fan really works! I no longer need to keep a large house fan pointed at the power-supply side of my Mac, so I have a lot more space on my desk.

The speed increase I'm experiencing is due to several factors besides an '030 and a math coprocessor. First is clock speed: 20 MHz with the Gemini, as opposed to the 8 MHz in my pokey Plus. (A 25 MHz 68030 is also available.) Second, (after backing up!) I used Cirrus's disk formatting utility to configure my hard disk for a 1:1 interleave factor; my Plus had used a factor of 3:1. For those of you who prefer charts to lived experience, I've included one below.

Caveats

Will the Gemini board work with System 7.0?

What System 7.0? Anyhow, by the time System 7.0 is stable enough for non-bleeding-edge-types such as myself to use, the Gemini init will probably be patched. After all, we can patch Virtual memory onto the *current* OS.

Will it work with my System?

Hey, I don't know what kind of wierd inits you're running. All I can tell you is that I am not adventurous in my system software—and that the board has worked for me. (My inits are: ATM, Cirrus 5.13, Datadesk, Suitcase. My cdevs are: Color, DialogKeys, General, Keyboard, Monitors, Mouse, QuickKeys, ShortCut, Sound, Startup Device, and Windowshade 1.1. I run PageMaker,

EDITOR'S CORNER

Sam Hunting

XPress, FreeHand, Illustrator, Author/Editor, TeX, Nisus, QUED/M and HyperCard regularly.)

Anything else?

According to the manual, Mac ROM code has "flaws" which affect the "timing of certain AppleTalk and Sound Driver operations. The GEMstart software repairs these flaws" when you boot. I am not networked, and I don't do sound, so I can't speak to these issues.

I do not choose to run in 1990

This will be my last issue as Editor of the *Active Window*. I can't say I've enjoyed every minute of it; but I do take great satisfaction in the present quality of the magazine, and great pleasure in seeing the volunteers who put *TAW* together grow personally and professionally. I am handing in my green eyeshade for two reasons: I can no longer afford to invest the forty hours a month the job has taken; nor am I comfortable with a masthead as large as *TAW's* has become. A fully-functioning masthead places constraints and expectations upon me: precisely those I sought to avoid when I went into business for myself. With success, the entrepreneurial yields to the corporate; as elsewhere, so at *TAW*. I do hope to continue to be involved in story development.

There are so many people to thank! All the writers who put up with my badgering; the artists who baked the half-baked; the editors who helped writers speak in their own voices; the advertisers who supported us and stuck with us. Let me single out: Gerry Lukos, who never got to learn PageMaker, although that was what she volunteered for; Mary Jane Westland, who brought us unheard-of success as Advertising Manager, even though she didn't want the job; "The Board," an entity which makes communication easy and even fun, not to mention possible; Martin Dalgleish, who untangled our finances; Lowell Halvorson, whose magazine design was "built for speed"; Sandy Moore and Gerald DiBello, long-time columnists (except this month, Jerry! Where is it?); and Caroline Freeman, "The Fastest Pen in the East."

A word about *The Active Window* itself. Our magazine occupies a unique position: we are of a commercial scale and impact, but we are produced by volunteers, for users. Our mission is to serve as an advocate for the members of BCS•Mac. Advertising, at TAW, is not for profit; it helps pay for the print run. Readers!—Please remember that we are here to speak for you, and keep those cards and letters coming; *TAW* needs you to keep on the straight and narrow.

Sam Hunting is no longer Editor of The Active Window. All typos, solecisms, and errors in fact or fiction in this article are his, solely.

OK

Highly Credible Chart

Mac	CPU	FPU	Color QD	RAM	System	CPU • Rating	Disk • Rating	Math† Rating	Total † Rating	Launch PageMaker	Replace 20,000 Spaces in QUED
II	020	Y	Y	4096K	6.02	3.38	2.64	6.72	3.90	14 secs.	1 min 10 secs.
IICX	030	Y	Y	5120K	6.04	4.26	2.89	7.88	4.71	20 secs.	1 min 9 secs.
Gem.	030	Y	N	4096K	6.02	3.18	1.40	23.29	6.96	20 secs.	1 min 7 secs.

*Lower is Better † Higher is Better

One early adopter who didn't get shafted. These test results were (except for the real-world tests at right) compiled using Scott Berfield's Speedometer 2.5, available as PD from BCS•Mac.

VOLUNTEER REPORT

Glenn Hoffman

Fall is a time of change in New England. The leaves shift color to the red end of the spectrum, the air temperature notches down a few tens of degrees, and the sun hunkers down so low on the horizon that most urban dwellers never see it. No, folks, this is definitely not California, where the sun shines all the time and bakes the brain. True New Englanders know that too much of a good thing turns one into a sybaritic air-head, that change is good for the mind and body—or so we keep telling ourselves as we pile on deeper layers of clothing for the simplest excursion. At least the ground stays put, which is all I have ever asked of it.

For most of us, fall is a time of reorganization and recommitment, and so it is at BCS•Mac. As always, we have many plans for the future, all of which are contingent on having people like you come forward to volunteer. The best way to start your volunteer career is to come to the monthly Volunteer Open House, held on the Friday after the second Wednesday of the month from 6:00 to 10:00 PM in the Macintosh office in Davis Square, Somerville. In December, that Friday occurs on the 15th. Let's review some of the openings that you can hear about and consider at the open house.

Active Window Volunteers

BCS•Mac's new Director of Publications, Caroline Freeman, has put out the welcome mat for volunteers at *The Active Window*. Three jobs are available immediately: software review writing, editing, and art work. Each job has specific characteristics.

Reviewers are given a software package to review in a month's time. These writers must have expert-level Macintosh experience, write clearly and effectively, and meet deadlines. They keep in touch with the Editor. Though reviewers work hard, the position carries a very nice perk: reviewed software belongs to the writer if the work is completed on time.

The unsung heros and heroines of any publication are the copy editors, who keep ham-fisted typists like me from making fools of themselves in print. *The Active Window* is always looking for experienced editors, as people with these skills are few and far between. Copy editors must be able to spell and catch a grammatical mistake at fifty yards. This isn't a skill everyone has, but if you do, you are desperately needed. The copy editors who work on each issue are mentioned in the masthead. Each *Active Window* masthead carries the names only of those editors who have actually worked on that issue.

If *The Active Window* is to live up to the vision of the Macintosh, the magazine must have good art work. After all, the seamless integration of text and graphics was one of the revolutionary features that set the Macintosh apart from other machines at its inception. At the moment, artists are in short supply. You don't even need to own a Macintosh, since good Mac art is often drawn with pencil and paper and scanned in. Doing *Active Window* art is a great way to get access to high-end Mac hardware and software, and you will be credited for every contribution.

While *The Active Window* does need artists, the more pressing need is for an art director. This volunteer will have managerial skills and know quality art work when it appears. The payoff is mention on the masthead—useful to those building a resume or assembling a portfolio—and creative control over the magazine's artwork.

PD Catalog Volunteers

Last August the latest version of BCS•Mac's Software Exchange Library Catalog, arguably the best listing of Macintosh PD software under the sun, appeared. While Macworld San Francisco, when the catalog update will go to press, is still several months away, work is already under way. To make the update's deadlines, a catalog editor, copy writers, and software compatibility testers are needed.

The catalog editor holds full responsibility for publishing the PD catalog, which comes out twice a year. Good design and managerial skills are required, as is experience with databases, since the electronic version of the catalog is a database of PD software.

Catalog copy writers compose the program descriptions and instructions for the entries in the catalog. Compatibility testers run every program on the PD disks, to test them on a variety of Mac configurations. Both copy writers and testers may keep the disks of PD software that they review.

Other Projects

Besides its ongoing publication activities, BSC•Mac has two special projects under way. MegaMeeting IV is scheduled for the weekend of March 31 at Boston College. The organizing team, which meets in the Mac office on alternate Saturdays at noon, is open to all interested volunteers. December team meetings are slated for the 2nd and the 16th. Managerial positions are still open on the MegaMeeting team.

BCS•Mac activists have been assisting the Aids Action Committee by training AAC volunteers on the Mac. Over the last few months the Mac literacy of volunteers for this non-profit organization has been substantially raised. Now that AAC volunteers are using Macs, volunteer consultants are needed. If you would like to help with this important project, give me a call.

If any of these volunteer opportunities interests you, come to the Volunteer Open House on December 15, or call me at (617) 288-9664.

Glenn Hoffman is Director of Special Events and Volunteers for BCS•Mac.

Nashoba Valley Subgroup

Bob Uliss

November's meeting topics were adding INITs and CDevs, a report on the computer show at the New England Trade Center in Woburn, and Word 4.0.

Some really good deals were to be had at the show: for example, one meg SIMMs (120ns at $73, 100ns at $90, and 80ns at $110) and modems ($85–$95 for 2400 baud and as low as $40 for 1200). PC clones were everywhere. It was an interesting experience for Mac users to see how high volume and competition drive down prices.

Previews of Coming Attractions

December: Networking

Bring your Mac and plan on experiencing life on a LAN in a hands-on demo. We have found hardware and software to enable us to connect up to 20 Macs. We will attempt to connect any other hardware you bring in.

January: Animation on the Mac

Studio 1 with 2D and 3D examples. An introduction to creating animation on the Mac, illustrating how animation accelerates comprehension of complex issues. We need help finding a big screen for this meeting. Please call if you can provide one.

February: Education on the Mac

An introduction to creating courseware and teaching aids on the Mac. Bring your tough courseware questions.

March: Desktop publishing on the Mac with the LaserWriter

Creating documents using a LaserWriter NT and Ready Set Go™ or Word 4 to create professional documents.

April: Power User Techniques and Mac Clinic

Demonstration of speed-up techniques for disk drives and Macs. Bring in your Macs! Bring in blank disks. We will be selling PD disks at 50 cents above cost at this meeting only.
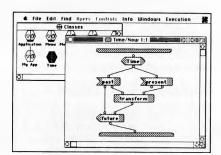
SPECIAL GUEST SPEAKER: Mary Westland, former co-leader of the Mac Metro West Group, will illustrate power-user techniques and answer Mac questions. Bring your Mac to show off your custom system and backgrounds.

All meetings are First Thursday at 7:00 PM in Room G-04 of the Hammond Building at Fitchburg State College, Fitchburg, MA.

Friday, December 1

Mac Office Games Night

Come to the BCS•Mac office for our second Games Night for an evening of fun and games. See and play your favorite games. Bring your own network games and find an opponent. Swap tips with other members. Unlimited popcorn provided. 6:00–10:00 p.m., BCS•Mac office, 48 Grove Street, Davis Square, Somerville. Reservations required—call the Mac office, (617) 625-7080.

Monday, December 4

HyperCard (MacStackGroup)

"HyperCard Games." Includes the fascinating Cosmic Osmo a CD ROM-based adventure that uses HyperCard, VideoWorks, and digitized sound, making it the state-of-the-art in multimedia entertainment on the Mac. We also make a survey of the public domain and shareware games available for HyperCard, and give you some good picks as stackware stocking-stuffers. 7:00 p.m., MIT, Building 4, Room 270, 77 Mass Avenue, Cambridge. For more information, contact David Drucker at (617) 876–1505.

Tuesday, December 5

Mac Office Resource Night

Sign up for time on a Macintosh at the BCS•Mac office and try out that public-domain or commercial application that you've been wondering about. Some help for problems is available. Spaces are very limited, so be sure to register early. 6:30–8:30 p.m., BCS•Mac office, 48 Grove Street, Davis Square, Somerville. Reservations required—call the Mac office, (617) 625-7080.

Wednesday, December 6

MacTechGroup

"Developer Tools." Interested in increasing your productivity as a programmer? Then come and hear several speakers describe the best features of tools such as Prototyper, Forms-Manager, AppMaker, etc. 7:00 p.m., MIT Sloan School, Building E51, Room 302 (corner of Wadsworth Street and Memorial Drive). For information, contact Maynard Chen at (617) 492–7463 or Owen Hartnett at (401) 253–9354.

Thursday, December 7

MacDesignGroup

"Mac Color Photography—Ready for Prime Time?" Michael Sullivan of Design Systems, Cambridge, discusses the promises and pitfalls of full-color processing on the Mac. Also, Steve Hollinger of S.H. Pierce & Company, Cambridge, demonstrates PosterWorks, his application permitting PostScript output of color TIFF files up to 100 feet square! See color output on a 300 dpi QMS ColorScript 100 laser printer—a full-color extravaganza! 7:00 p.m., MIT, Building E51, Room 302, (Corner of Wadsworth Street and Memorial Drive), Cambridge. For more information, contact Conrad Willeman at (508) 468–7250, evenings.

Macintosh Seminar

"Introduction to Adobe Type Manager and BCS Desk Accessories." Tom Carrolan shows you Adobe Type Manager, an enhancement that gives you great-looking type on any printer, including an ImageWriter. He also shows how to install and use some of the hundreds of desk accessories, FKeys, INITs, and CDEVs that are part of the BCS•Mac Software Exchange Library. For more information, call Tom Carrolan at (508) 897–2531. Demo format, not hands-on. Cost: BCS members $25; non-members $50. 6:30–9:00 p.m., BCS•Mac office, 48 Grove Street, Davis Square, Somerville. Reservations required—call the Mac office, (617) 625-7080.

Nashoba Valley Macintosh

"Networking." Bring your Mac for a hands-on demo of life on a LAN. We also attempt to connect to any other strange type of computer hardware you bring in. 7:00 p.m., Fitchburg State College, Hammond Library Room G-04, Fitchburg (follow signs to FSC upon entering Fitchburg). For more information, contact Debra French at (508) 448–3406.

Friday, December 8

Macintosh Drop in Night

"Drop in Night." This is a monthly open house at the Macintosh Office in Somerville. It is your chance to see the office and meet some of the activists on an evening when the Mac Office is closed for business and open for fun and conversation. It is a perfect way to learn more about the BCS•Mac Group and what it can do for you. Drop in, say hello, and pull up a mouse. 6:00–10:00 p.m., BCS•Mac office, 48 Grove Street, Davis Square, Somerville. For more information, contact the Mac office at (617) 625-7080.

Macintosh Seminar
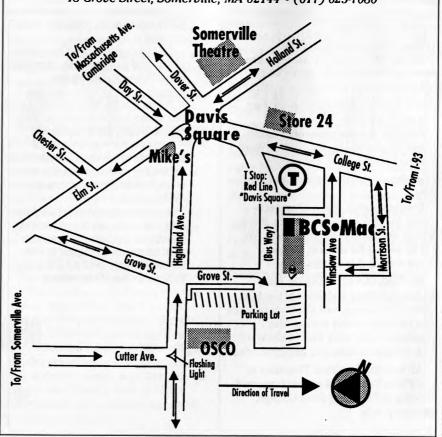
"Introduction to Personal Music Learning." John Amaral shows how using a personal computer can put you on the road to becoming a virtuoso! If you've always wanted to learn to play a musical instrument; if you play and want to use a computer to rapidly improve your playing; or if you want to learn to improvise, this seminar is for you. For more information, call John Amaral at (617) 266–2886. Demo format, not hands-on. Cost: BCS members $25; non-members $50. 6:00–8:30 p.m., SPECIAL LOCATION: Lasalle Music Store, 1116 Boylston Street, Boston. Reservations required—call the Mac office, (617) 625-7080.

MacMinuteman

Come hear ham radio operator Terry Stader (KA8SCP/1) talk about wireless communications with the Mac. 7:00 p.m., beginners' session. 7:30 p.m., main meeting. Russell Street Elementary School, Littleton. (Take 2A east off of 495; take your first left at the Russell Street School sign; go .75 miles to the high school. Turn right and go around the football field to the Russell Street School. From Acton, go through Littleton Center on 2A. Turn right at Russell Street School Sign.) For more information, call Lindsey Anderson at (508) 371–3065.

BCS•Mac Office

48 Grove Street, Somerville, MA 02144 • (617) 625-7080

Wednesday, December 13

BCS•Mac

After a one-year hiatus, the December Main Meeting features "Games Night." Doug Glen, director of Lucasfilm Games, is on hand to present Pipedream, a new Lucasfilm game for the Mac. Doug also speaks about Lucasfilm's future directions. Broderbund shows its city-planning simulation, Sim City. Plenty of other games, giveaways, and participation. 7:00 p.m., MIT, Building 26, Room 100, 77 Mass Avenue, Cambridge.

South Shore Mac

It's time for fun and games! Bring your favorite game (shareware or commercial) and show us how it works. Also, a continuation of a system clinic that asks the all-important question, "What's in the system folder?" 7:00 p.m., Boston Edison Training Center, Chiltonville. (Take Route 3 south to Exit 4 (Plimoth Plantation). Right at Sandwich Road. Left at stop sign then .10 mile and left at Boston Edison Training Center.) For more information, contact Cheryl McKeary at (617) 585-9623.

Thursday, December 14

Macintosh Business

"System 7 and New Hardware." How much advanced technology will business users want? David Allred of Photon, Inc. disassembles a Mac and guides you towards some answers. 7:00 p.m., Q&A; 7:30 p.m., main presentation; 8:30 p.m., follow up, MIT, Building E51, Room 328 (between Amherst Street and Memorial Drive at Wadsworth Street. Free parking, Kendall MBTA Red Line.) For more information, contact Tom Stone at (617) 576-0758 or Hal Wells at (617) 237-0439 before 10:00 a.m.

Macintosh Seminar

"Introduction to SuperPaint." Vedder Wright explains the basic features and capabilities of this two-in-one drawing and painting program. For more information, call Vedder Wright at (617) 876-2461. Demo format, not hands-on. Cost: BCS members $25; non-members $50. 6:30–9:00 p.m., BCS•Mac office, 48 Grove Street, Davis Square, Somerville. Reservations required—call the Mac office, (617) 625-7080.

MacMetroWest

"It's a Party!" Come celebrate the holidays and discuss the future of the MacMetroWest group. We provide the soft drinks; bring a munchie or dessert if you can. 7:00 p.m., at the Westlands' house, 20 Fairview Drive, Southboro. (Take Route 9 west through Southboro; first left after Route 85 onto Middle Road; go to the end of Middle Road; right onto Parkerville; first left onto Fairview Drive.) For information, call Mary Westland at (508) 485-8461.

Seacoast Macintosh

Telecommunications: productive and fun things to do with a modem. 7:00 p.m. Liberty Mutual, 225 Borthwick Avenue, Portsmouth, NH. (Take I-95 to Exit 3 (Route 101). Follow hospital signs. Liberty Mutual is just south of Portsmouth Hospital. Signs will be posted for exact room.) For information, contact Cynthia Harriman at (603) 436-1608.

Tuesday, December 19

Macintosh Seminar

"Introduction to Databases—Part 1." Glenn Hoffman teaches the basic terms and procedures used by all Mac databases. We do not discuss the high-end, relational packages. For more information, call Glenn Hoffman at (617) 288-9664. Demo format, not hands-on. Cost: BCS members $25; non-members $50. 6:30–9:00 p.m., BCS•Mac office, 48 Grove Street, Davis Square, Somerville. Reservations required—call the Mac office, (617) 625-7080.

Manchester NH Macintosh

Topic to be announced. 7:00 p.m., SEE (Science Enrichment Encounters), 324 Commercial Street, Manchester, NH (Technology Park). Directions: from Route 293 north, right off Granite Street exit, over bridge, first left, 1/4 mile down on left. For more information, contact Neil McCann at (603) 627-3844.

Wednesday, December 20

MacTechGroup

Topic to be announced. 7:00 p.m., MIT Sloan School, Building E51, Room 329, 50 Memorial Drive, Cambridge (1 block from the Kendall T stop), Cambridge. For information, contact Maynard Chen at (617) 492-7463.

Martha's Vineyard Mac

Topic to be announced. 7:00 p.m., Bay Farms Realty Inc., Second floor, 1 Mayhew Lane, Edgartown. For more information, contact Edward Kopec at (508) 627-8974.

Thursday, December 21

Macintosh II

Topic to be announced. 7:00 p.m., MIT Sloan School, Building E51, Room 311 (corner of Wadsworth Street and Memorial Drive). For more information, contact Dave Titus at (617) 884-2826.
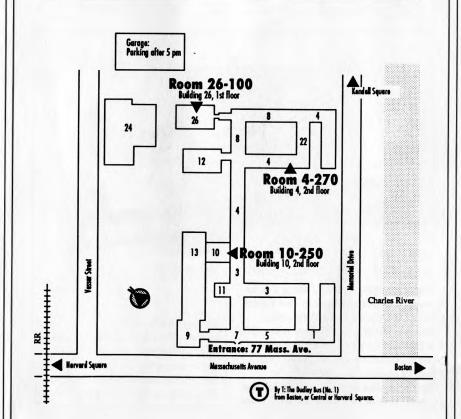
North Shore Mac

Topic to be announced. 7:00 p.m., Sawyer Free Library, Weston U. Friend Room, 2 Dale Avenue, Gloucester. (Take Washington Street (first exit off traffic circle); after railroad tracks turn left onto Railroad Avenue, when it ends go left onto Prospect, then 2nd right onto Dale. Library is the last building on the right. For information, contact Stephen Beardslee at (617) 547-0430, days.

Rhode Island Macintosh

"Macintosh Repair and Upgrade Secrets." Come hear Larry Pina tell how to save money by repairing your own machines. 7:00 p.m., Brown University, Salomon Hall 001, 115 Waterman Street, Providence, RI. (Salomon Hall is on the main Brown Green. First building to the left inside Faunce Arch on the Green.) For more information, contact Mark Flieger at (401) 331-5249 days.

BCS•Mac MIT Meeting Sites

Garage: Parking after 5 pm

Room 26-100
Building 26, 1st floor

Kendall Square

Room 4-270
Building 4, 2nd floor

Room 10-250
Building 10, 2nd floor

Charles River

Entrance: 77 Mass. Ave.

Harvard Square   Massachusetts Avenue   Boston ▶

By T: The Dudley Bus (No. 1) from Boston, or Central or Harvard Squares.

Edward R. Tufte
The Visual Display of Quantitative Information

Peter Storkerson

Myths are important to all of us. They are not just fanciful stories about the past; they are the ways we understand our universe. But they can be constraining as well as enabling, limiting us when they outlive their usefulness.
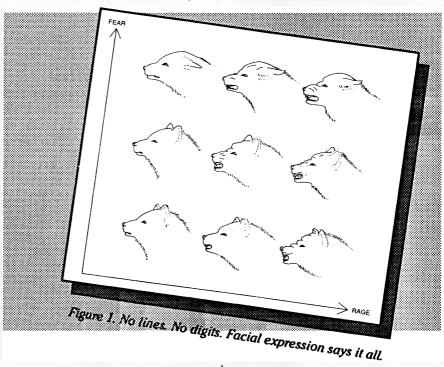
Computer myths, shared by programmers, users, and the general public alike, have repercussions in computer design and use. Like most myths, these are embedded in history—in this case, the history of mainframe number processors. Until recently, most computing machines used only the crudest, typewriter-like output devices. The PC screen began as another typewriter, printing ASCII characters like the old teletype machines. It long remained unviewable, tarted up with tasteless color intended to mask its deficiencies but more often compounding them.

Standards of Design

But the Macintosh is different, we think. It conveys emotion. It liberates visual presentation. We view the Mac first and foremost as a desktop publishing tool—a word- and video-processing device. Numbers are for them, while the Mac is for (the rest of) us. Thus,

we prolong and live out the myth: good visual presentation adds emotion to words, while numbers remain implacably mute and culturally alien. But as Edward Tufte documents in *The Visual Display of Quantitative Information*, visual presentation is neither just verbal nor just emotional. It communicates basic facts, as powerfully in the language of numbers as with text. In considering the use of graphics for the presentation of quantitative data, Tufte proposes standards of design that are equally appropriate to text and visuals.
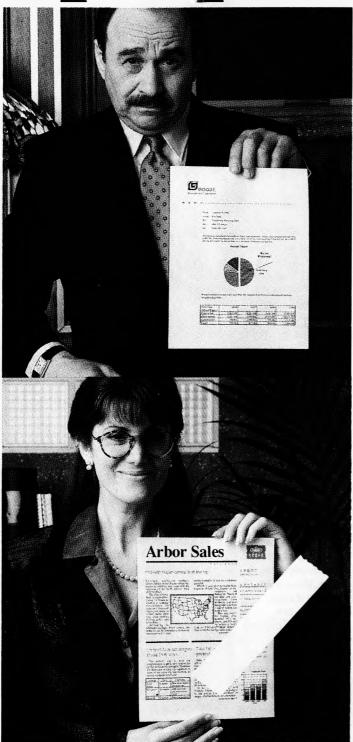
Edward Tufte has been a Professor of Public Affairs at Princeton and of Political Science and Statistics at Yale.

Figure 1. No lines. No digits. Facial expression says it all.

His approach emphasizes use value and history. He traces the development of graphing from geographical maps to the mapping of abstract quantities to the graphing of transformations of quality, as with the effects of fear and anger on the wolf's facial expression (Figure 1) or the entire life cycle of the Japanese beetle (Figure 2).

There's a Word for people like you.

Whether you're a marketing maven on your way up, or a seasoned executive simply trying to make your point, when it comes to putting thoughts down on paper, Microsoft is the Word for you.

And our users aren't the only ones who think so. Recently, the editors of *Mac User* gave Microsoft® Word version 4.0 the highest rating of any Macintosh® word processing program. Period.

Not altogether surprising. You see, besides being perversely committed to R&D, we use a highly sophisticated approach to improving our product. We listen.

All of which has led to innovations like Word 4.0's powerful Table feature, enabling users to create side-by-side paragraphs, lists and even forms, without the hassle of dealing with tabs.

What's more, Word 4.0 can even import Microsoft Excel tables and charts and automatically update them. Making it easy to ensure accuracy. Plus, Microsoft Mail can be sent from within Word 4.0, significantly boosting workgroup productivity.

For something a tad more informative than this ad, call (800) 541-1261, Dept. K25, to receive a brochure or the location of your nearest dealer. You'll find that no matter what type of word processing you're performing, you could be doing it better. Just take our Word for it.

Microsoft
Making it all make sense·

Figure 2. Data woven into a story gives meaning.

TABLEAU GRAPHIQUE de la température en degrés du thermomètre de Réaumur au dessous de zéro
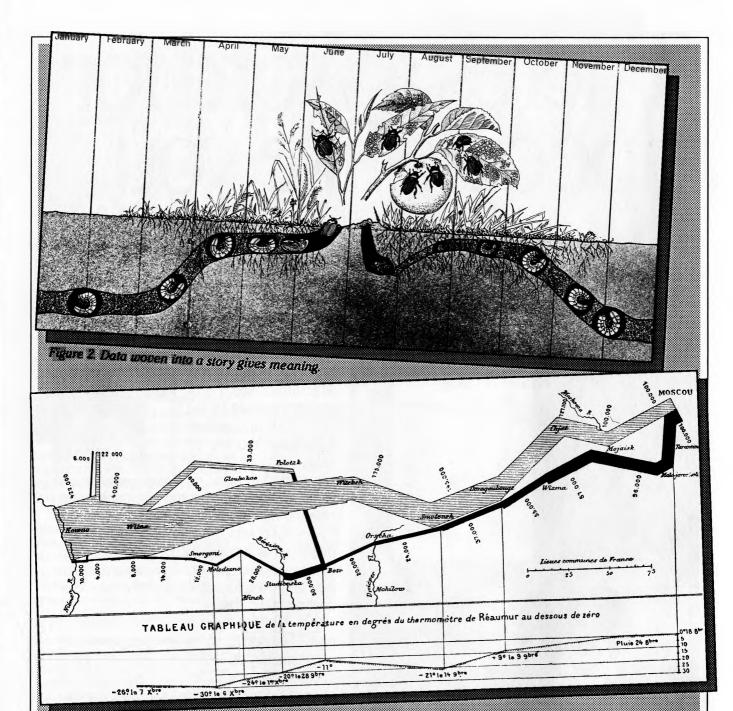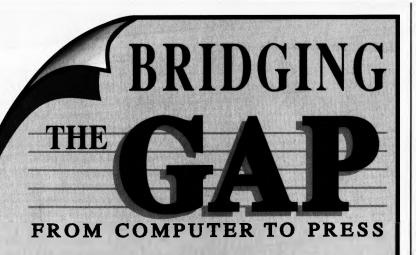
Figure 3. Napoleon invades Russia. Did frigid temperatures affect troop attrition?

Tufte's main concern is with displaying data so as to communicate clearly and forcefully, to reveal relationships that may be hidden from the analyst. "Graphical excellence is the well-designed presentation of interesting data—a matter of substance, of statistics, and of design, ...of complex ideas communicated with clarity, precision, and efficiency. ...[It] gives to the viewer the greatest number of ideas with the least ink in the smallest space." Each of these criteria operates independently. The goal is to communicate ideas;

the appropriate tools are the simplest possible; and each element of the design is to perform as many jobs as possible. In practice, this means continually assessing the design to be sure that all elements are appropriate and reducing the design to only that which is logically necessary. Two outstanding examples of this art are Charles Joseph Minard's Figurative Map of Napoleon's ill-fated campaign to conquer Russia (Figure 3) and E.J. Marey's 1893 Graphical Train Schedule (Figure 4).

At a Glance

Minard's map of Napoleon's campaign shows at a glance the magnitude of the disaster, as the half-million travel east toward Moscow and the Russian winter. We see the decimation and the return of the few not left on the frozen steppe. After confronting the devastation, we look more closely at the causes and the details, which include location, direction of movement, dates, temperatures, and troop losses in battle and ice. We see them in basic form at a distance, or we can look more closely for documentation—all with ease.

Figure 4. Non-modal hypermedia. All aboard!

As remarkable as Minard's map is Marey's Geographical Train Schedule, a rectangle with distance arrayed vertically, calibrated by train stops, and time displayed horizontally. At a glance we see when each train arrives and departs at each of its stops, how fast it travels, and how to make connections between any points in the system. This single table can replace an entire schedule book. It is the ultimate in non-modal hypermedia: every piece of data is available simultaneously.

Visual presentation is neither just verbal nor just emotional. It communicates basic facts, as powerfully in the language of numbers as with text.

These two examples epitomize how much can be shown, at how many levels, and at how many distances of view. Tufte refers to these characteristics as "Data–Ink Maximization" and "Multifunctioning Graphical Elements:" showing the maximum data with the minimum apparatus and making each element do as many jobs as possible. He shows how to systematically remove extraneous elements to make data stand out.

Simple Tools

Simple tools make the best charts. The display of current receipts of government as a percentage of GNP for various countries across the 1970s (Figure 5) illustrates this clearly. At a glance we can see the general rates of change for the whole and can also compare different countries on rates and trends. Here, as elsewhere, design excellence is making the most with the least. We see the power of going low-tech, using only that which is relevant and appropriate. Tufte also includes in his discussion illustrations of changes which can make good charts excellent (Figure 6).

The Visual Display of Quantitative Information is filled with examples of bad presentation as well as good, including charts that lie, unreadable charts and charts full of extraneous, meaningless junk. Charts can easily be over-built and over-used. Charting is a resource and, as with other resources, its use must be justified at every step. It is appropriate only when it says something that numbers cannot say by themselves.

Charts can lie by presenting defective or distorted conceptions of data (for example, showing annual increases in the federal budget without normalizing for inflation) or by creating their own lies, as in an inflation chart from *The Washington Post*. Here, the chart reflects change in dollar value by changing each dimension of the dollar. This changes total area—the square of the actual change in each dimension. Thus, change in purchasing power is grossly overstated.

Computer graphics are also full of cases of "I used it because it was there," particularly with respect to patterns and color. Computers now provide tremendous resources which we are tempted to use without discipline. Color can be particularly dangerous. While there is a clearly perceivable gradation from white to black, we see changes in color as qualitative. Is there a way to order the range from green to red? Tufte thinks not. The same question applies to patterns—to the ubiquitous pattern palette.
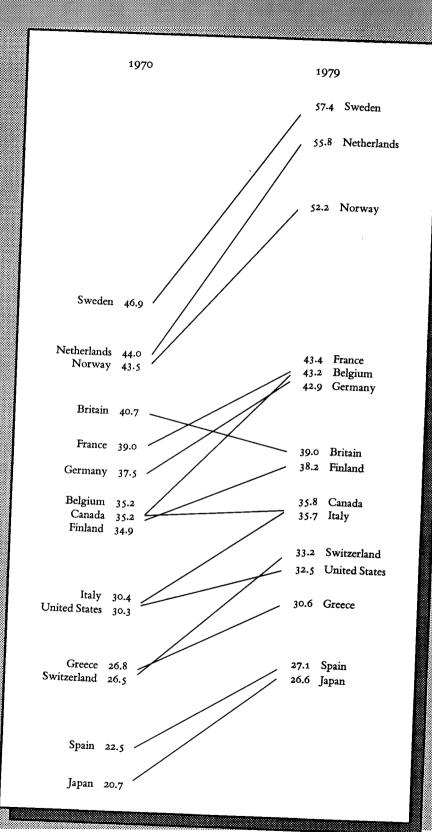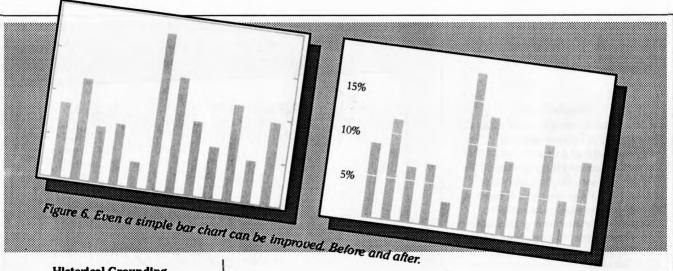

Figure 5. Words. Lines. How fast can you spot the exception?

Figure 6. Even a simple bar chart can be improved. Before and after.

Historical Grounding
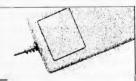
One of the great joys of this book is its historical grounding. Cognizance of history involves avoiding past mistakes and incorporating as much as possible of the past to enrich and ground the present. This approach can be seen in all aspects of the book.

The prose is elegant and fully formed, and the layout is a tour de force. The book is set in Monotype Bembo® (now being released in hinted PostScript format). The leading and margins are generous, and the combination of type, spacing, and layout give the volume an open and timeless feel. The paper is first-rate. There is nothing flamboyant about this work, which is published by Graphics Press, Box 430, Cheshire, Connecticut 06140, and is available at WordsWorth and other bookstores.

Cambridge Electronics
When You're Ready...

Specials

MIDI Starter Kit $195.00
Includes Altec MIDI Interface and DeLuxe Recorder, the Home MIDI recording studio Software from Electronic Arts.

Complete Home Studio $899.00
Includes MIDI Starter Kit, Roland PC100 Keyboard and Roland CM32L Sound Module. Everything you need to make fully orchestrated music. Plugs into your Mac and into any stereo system.

BOSS MA12 Amplified $220.00
Speakers (Pair)
Use with the above systems, or use it directly with your Mac. Either way these portable speakers give full, impressive sound.

ColorSpace II $1650.00
Plugs into your Mac II and TV or VCR. All you need to transfer magnificent Mac graphics and animations to video.

Voice Navigator $1049.00
Voice Navigator XA $1449.00
This Articulate Systems product allows you to control your Macintosh by speaking to it directly or via Phone.

Tektronix 4693DX (Demo) $6300.00
Wax transfer colorprinter. Great for presentations, overheads and teeshirts. We printed 300 pages with it.

Adobe Type Manager $55.00
Creates smooth type on your screen and Imagewriter printer at any size. Great for precise layout work and video.

Radius Color Calibrator $450.00
With purchase of Radius color system. It allows you to accurately display Pantones™, scanned images and set custom color temperature.

1MByte SIMM $99.00
With the purchase of any Storage Dimension drive or holiday special.

Drives

Storage Dimensions
Cambridge Electronics is pleased to support a new line of hard drives and optical drives from Storage Dimensions. The high performance hard drives boast an accesstime of under 20msec. All drives come complete with PC Tools, the best selling disk management software, and a full one year warranty that is honored "in house" at Cambridge Electronics.

Internal Drives

Mac 40i	$ 599
Mac 80i	$ 899
Mac 100i	$ 999
Mac 195i	$1649

External Drives

Mac 40	$ 749
Mac 80	$ 999
Mac 100	$1099
Mac 175	$1699

Products

Apple • Daystar • Levco • Orchid Radius • Calcomp • Houston Instruments Howtek • Mirus • Tektronix • QMS DaynaFile • Hayes • Practical Peripheral Corp. • PhoneNet • Prometheus • TOPS E-Machines • Radius • RasterOps SuperMac • MassMicro • PLI • Storage Dimensions • SuperMac Technologies Mark of the Unicorn • Opcode • Passport Truevision • Teak • Storage Dimensions Macromind • M&M • Truvel • Microtech Tektronix • Tecmar • **And more...**

Prices valid thru the 7th of January Nineteen Ninety.

Apple Authorized Dealer

Storage Dimensions Authorized Dealer

MASS6micro Authorized Dealer

TRUEVISION Truevision Value Added Reseller

radius Authorized Dealer

S SuperMAC Authorized Dealer

TEAC Teac Authorized Dealer Recordable Laserdisc

255 Beacon Street • Somerville, Ma. 02143 • (617) 625-2525

...a Data Bucket. Carry it to the data stream, fill it up, then carry it back home
Better Living Through Data Buckets

NMA fits onto the end of a serial cable and makes the necessary connections so that the Mac is talking into the Bucket's listening wire, and vice-versa, just as if there were modems connected to the two machines. Once I've set the two computers to the same communications parameters (in my case, 9600 baud, 8 bits, no stop bit, no parity), file transfer is as simple as telling the Mac to receive and the Bucket to send.

Because the Bucket's software allows me to save files in universal formats, I can use the non-Mac files almost as is. My WordStar text files are read directly by Microsoft Word, and the CalcStar spreadsheets, saved in DIF format, are translated by Excel without a single hitch. If I were the type of guy who likes to spend money, I could buy MacLink software, which would translate these files without my having to use any intermediate file formats.

So there's my personal example of Better Living Through Data Buckets. I have a portable machine that gives me all the functionality of Microsoft Word and Excel, weighs less than five pounds, and costs one-thirtieth the price of a Macintosh Portable. What's more, I can carry my Bucket around without any paranoid feelings that I'll drop it and be out six thousand bucks. If I throw the Bucket down a flight of stairs, I can buy another one.

Andy Ihnatko

The national fraternity of Macintosh users, much like the seven blind men examining the elephant, have examined the Macintosh Portable and found it wanting.

The Portable costs as much as three used cars. It weighs as much as three sacks of flour. Although the beast is well engineered, reality pales in comparison to the laptop users have been dreaming about for the past three years.

But what are the alternatives? A Macintosh-compatible portable from Wallaby or Colby can set you back $3,000. IBM-compatible laptops are cheaper still, but these, too, remain out of the reach of those on strict one-computer budgets.

Sure, people have the fantasy of floating in a pool lounger with a Mac Portable, completing PageMaker layouts and complex financial templates in Excel. But this doesn't accurately reflect how portables are really used. Most people treat a portable computer not as a replacement but as an accessory for the home computer. The need is simply to get a letter written in the car or a report done at the library, not to produce a finished document. At home, the disk pops out of the laptop and into the desktop PC for final processing and printing. Similarly, the necessity for a real diesel-powered database or spreadsheet on the road is usually minimal; beyond looking up simple name and address data, or performing straightforward calculations, the laptop's software just collects data. Once again, a full-featured database awaits on the hard drive of the deskbound PC.

In this strategy, the portable computer is just a Data Bucket. Carry it to the data stream, fill it up, then carry it back home and empty its contents into the main tank. If this is all you expect from a laptop, you have no need to go to the expense of a Mac Portable or a DOS laptop.
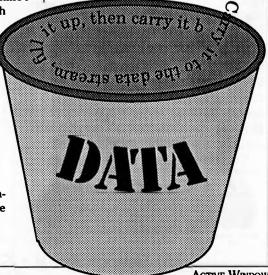
My Data Bucket

For the past year, my Data Bucket has been a NEC PC-8401A laptop computer, which I bought secondhand for less than $200. It has WordStar, CalcStar (a spreadsheet program), a simple database program, and a telecommunications program built in, and enough memory to store a 60-page document. It can't run Macintosh software, but then I already have a machine at home that can do that. It is much smaller than a Mac or IBM laptop could ever hope to be, and it runs for eight hours on battery power.

Throughout the day, the Bucket collects various data. In lecture halls and the library I process words; in chemistry labs I plug figures into a spreadsheet; I may also hack out some programming code as well. The only time I really miss not having a Macintosh Portable is when I get home and have to get the Bucket's files into my Macintosh. Obviously this isn't as simple as swapping a disk, but with telecommunications software running on both computers, file transfer is relatively painless. I just connect the serial port of my Bucket to the modem port of my Mac with an inexpensive device called a null modem adapter, which can be purchased at any Radio Shack for about ten bucks. The

How to Shop for a Bucket

The best-priced data buckets are usually the castaways of technological society—glum little Tandys, NECs, and Sharps that have been discontinued by their manufacturers (as my NEC was) and picked up by salvage dealers, or those unloved, unwanted laptops you find in the classifieds. On the plus side, you shouldn't have to spend more than $300 for your Bucket, and perfectly functional machines can sometimes be had for less than $100. However, because you're buying outdated or used equipment, you may not be able to get

> **The portable computer is just a Data Bucket. Carry it to the data stream, fill it up, then carry it back home and empty its contents into the main tank.**

your Bucket serviced if things go wrong. But this isn't as bad as it sounds. Most Buckets are 100 percent solid-state devices (no moving parts); barring any real negligence on your part, a Bucket that works when you buy it is likely to function for years. Here are the features you should look for:

Software. It's usually a safe bet that you won't be able to buy any additional software for your Bucket, so be sure you're content with the software it's sold with. A word processor and a tele-communications program are your two major tools for getting info into your Bucket and then getting it out, so any prospective Bucket must have both. A spreadsheet and a database program are also nice to have but aren't essential. Be certain that the software can save its files in a format readable by Mac software. Most word processors can save files in a text-only format (no program-dependent formatting) which

can be read by most any Mac word processor. You may also find a Bucket with well-known software built in. Word-Star files, for instance, can be converted with all of their formatting intact if you have the appropriate translation software for your Mac. Similarly, you may find Buckets with Multiplan spreadsheet software built in. As a pre-cursor to Excel, Multiplan documents can be read in by Excel without any modification. Generic spreadsheet formats would include DIF, SYLK, and tab-delimited format. Database programs for Buckets tend to be rather rudimentary, but most are useful for simple address lists and can save in tab-delimited format.

Storage Capacity. Be sure that the Bucket has enough storage space to hold a day's worth of your work. Most Data Buckets rely on memory-based RAM disks for file storage instead of traditional diskettes; a floppy drive consumes a lot of power and usually results in a larger, heavier laptop. Although a RAM disk operates literally at the speed of light, it usually doesn't store as much data as a floppy disk does. As a rule of thumb, if you divide the amount of storage space (in kilobytes) by two, you can determine the approximate number of typewritten pages the Bucket can hold. A laptop with a 32K RAM disk can generally hold about 16 pages of text. Of course, the exact figure will depend on how the document is formatted. If you need an exact figure, type in a page of text, save it, and make as many copies of that page as you can until the Bucket reports that you're out of memory.

Communications. If the Bucket is going to talk to your Mac, it will need a serial port and some sort of telecommunications program. The telcomm software doesn't have to be state-of-the art; even if all it can do is pass a text file through its serial port, it will do just fine. Better programs will support protocols like XModem, which ensures that each block of data is sent accurately. The serial port is usually a Yes or No sort of item; either it's there or it isn't. You should check to see what sort of connector the serial port has. 99.44 percent of all serial ports in existence have either a 25-pin or a 9-pin D-type connec-

tor (DB25 and DB9 in semi-technical lingo). It's usually quite easy to find cables for these two standards. If, however, the manufacturer opted for a 17-pin connector shaped like a Star of David, you're going to have trouble finding a cable that will connect to your Mac. If the seller isn't providing you the cable, say goodbye right there or face the trouble and expense of paying someone to build the appropriate cable for you.

Keyboard and Display. Back in the old days (we're talking 1985 here), some companies had rather quaint ideas about keyboard design. In an effort to reduce size and cost, some laptops were manufactured with keyboards that were too cramped, or had a mushy feel, or keys that just plain fell off. Definitely test out any prospective Bucket by typing a few pages. While you're at it, check out the Bucket's screen. Most of the laptops of yesteryear were manufactured with unenhanced LCD screens, which aren't nearly as readable as the backlit, supertwist screens of today. Those old LCD's are perfectly readable with proper lighting, but in a dimly-lit library you'll usually have to adjust the contrast and tilt of the display for maximum readability. Even then you may have to strap on a miner's helmet to read the display clearly. Be sure that you're comfortable with the display, keeping in mind the lighting conditions under which you'll be working.

The Tandy WP2: A Case Study

The WP2, recently released by Tandy, is a stunning example of the Data Bucket Principle. It's a slim, trim word-processing computer the size of a sheet of paper and only an inch thick which will run about ten hours (according to Tandy) on AA-size batteries. It has 22K of RAM built in and can accept 32K RAM cards which fit into a slot in the side of the laptop. Its keyboard is full-

> **Definitely test out any prospective Bucket by typing a few pages. While you're at it, check out the Bucket's screen.**

sized and has an excellent feel, and the 80-character-by-8-line display uses the latest supertwist LCD technology. It has a full complement of communications ports; in addition to a standard 9-pin serial port, it has a parallel connector for direct connection to any standard IBM-type printer.

The WP-2's built-in word-processing program is first-rate, boasting extensive formatting capability as well as a spellchecker and online thesaurus. The machine also has a good telecommunications program which supports the XModem transfer protocol. Because the WP-2 is being marketed as a word processor and not a laptop computer, there is no spreadsheet or database program. However, any data bucket with a word

processor can create files that can be used with Mac databases or spreadsheets. All you need to do is use your word processor to type in your data as a tab-delimited text file. A text file containing line after line of "Name(tab)Address(tab)Phone#" will import into Excel or FileMaker just as easily as if it had been created by a full-featured database.
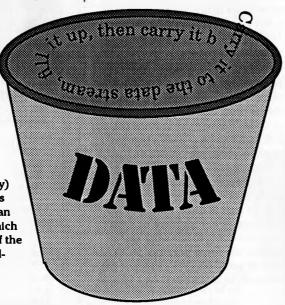
And the WP-2 is a brand-new product! This means that service won't be a problem, and you can buy things like external disk drives, extra memory, portable printers, etc. right at your corner Radio Shack. A tantalizing snippet from the WP-2 owner's manual hints that additional software for the WP-2 (like spreadsheet and database software) may become available on ROM cartridges in the near future.

All this for $349! At this writing, the WP-2 is being advertised at a sale price of $299—an offer which undoubtedly will be repeated.

Where to Look

With a little Yankee frugality, you can buy a Data Bucket at whatever price you can afford—if you're willing to look long and hard. *Computer Shopper*, a phonebook size monthly magazine devoted to bargains in computer hardware and software, is available at most news stands and is a good place to look for salvage, used, and "no-name" computers. Ultra-bargains can be found through local classifieds magazines like *The Want Advertiser;* these afford the greatest choice in used computers. National used-computer brokers like The Boston Computer Exchange can match a buyer with a seller very quickly, but generally the purchaser is buying the computer sight-unseen; therefore such services can be very risky. It also pays to keep an eye on the For Sale sections of your local bulletin boards. Happy hunting!

Apple can't touch this.

But you can.

"Clearly in a class by itself."

That's how *MACazine* judged the MAC-101, our advanced keyboard for the Macintosh.

It's not hard to see why.

With the MAC-101, you can work the same fast, simple way

The MAC-101 lets you execute program commands with a keystroke—without having to reach for the mouse.

your mouse works—without leaving your keyboard.

And turn functionless function keys into a major resource.

It's the only keyboard that works with every model Macintosh.

It's also the only one Microsoft® recommends for *Word® 3.*

The only one Aldus® recommends for *PageMaker.®*

The only one Ashton-Tate® recommends for *FullWrite® Professional.*

And the only one Letraset® recommends for *Ready, Set, Go!®*

Function is as function does.

Since the function keys on an Apple® Extended Keyboard don't relate to most Macintosh software, their only real function is to take up space.

But MAC-101 can find them a real job. By using our *MasterStrokes®* enhancement software to assign them dozens of mouse or keyboard commands.

Even functions that would otherwise need numerous keystrokes—

or mousestrokes—can now be assigned to just one key.

Feeling is believing.

Obviously the MAC-101 is great news for every Mac user.

But for IBM® types who are feeling their way around on the Mac, the news is even greater.
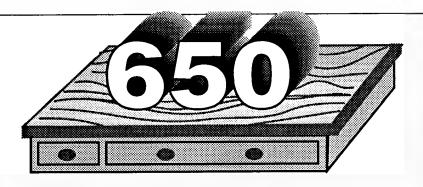
Because our keyboard is laid out in a standard configuration that's identical to the IBM PC.

Which means that anyone who's used to an AT or PS/2—or a Selectric, for that matter—will instantly know the MAC-101 like the back of their hand.

And type on it accurately, with the confident touch that comes only from tactile, positive-response keys.

"Superb."

That's how *PC Magazine* sizes up the MAC-101. While *MacWEEK* calls it "the most important accelerator you can buy for a Macintosh."

You can buy it for under $195—software included.

And since it carries a two-year warranty, you'll be enhancing your piece of mind right along with your Mac.

So call 800/826-5398 (in California 800/592-9602) and find out where you can lay your hands on the MAC-101.

Once you do, you won't let go.

Ours is the only keyboard that's recommended by their publishers for Ready, Set, Go!, Word 3, FullWrite Professional and PageMaker.

d
DATADESK

650 Megabytes *on the Desktop:*

The Macinstor 650 HCV

Jonathan Carpenter

Putting together a CD-ROM requires a large storage device to contain the disk's image. Although several small hard disks could be chained together, that would not simulate exactly what the CD-ROM would look like, and the exact image wouldn't be assembled until the mastering of the CD-ROM at the factory. Optical disks are difficult to work with, and they are very slow. All this makes a very high capacity hard disk the best choice.

To make an image that would fill an entire CD-ROM requires a hard disk with a capacity of about 700 megabytes. Until recently, a hard disk like this was the size of a small refrigerator and needed 220 volt, 30 amp, 3 phase power, air conditioning, a raised computer room floor under which to put its large power and interface cables, and a mainframe computer to run it.

Large and Heavy

Versions 1 and 2 of the BCS•Mac PD-CD, made during 1988, used a hard disk from Racet Computers. Although the disk performed very well, its capacity was only about 330 megabytes. Very large and heavy, the unit had to be shipped in a wooden crate held together with plastic packing straps. The capacity of the Racet disk limited the contents of the CD-ROM, and the disk's bulk and size made it very difficult to ship.

For versions 3 and 4 of the PD-CD, Storage Dimensions lent BCS•Mac a Macinstor 650 HCV. Not only was this hard disk much higher in capacity (about 650 megabytes), it was also much smaller and lighter (about the size of a shoebox). The Macinstor required only a cardboard box for shipping, which greatly simplified sending it to Discovery Systems for the pressing of the CD-ROM.

Admirable Performance

The Macinstor 650 HCV performed admirably. The disk connects with a standard SCSI cable and fits right next to the Mac. It requires very little desk space and is reliable, easy to use, and very fast.

The Macinstor 650 HCV has an average seek time of 16.5 milliseconds and a data transfer rate of 15 megabits per second and uses only 27 watts of power. The hard disk includes an external terminator, a definite advantage for chaining it with other hard disks. The SCSI address can be set with an external switch on the back of the case, another advantage in chaining disks. The 650 HCV has its own fan; in a standard office environment the hard disk would be quiet enough.

The hard disk arrived formatted and initialized, with a system installed. A manager/installer program is included, for use in changing or adding partitions or reinitializing. The program is very straightforward and easy to use.

Weak Manual

The Macinstor's 34-page manual was the unit's only weak point. Fourteen pages of the manual contain a fairly useless glossary which includes definitions for Whitney head, mainframe computer, and data base management system—items not directly related to the operation of the hard disk. Only six pages are devoted to the manager/installer. More detail would be helpful, especially if something went wrong.

For backing up the Macinstor, Central Point Software's PC Tools for the Mac is supplied. The program provides both complete and incremental backup. A disk sector editor and file recovery programs are included.

Storage Dimensions markets a line of hard disks with capacities from 45 to 650 megabytes, both external and internal, and zero-footprint hard disks to fit under the Mac Plus and SE. Optical drives are available in both the WORM and erasable magneto-optical variety. The parent company manufactures many of the drive units (head and platter assemblies) used in the Macinstor line.

> *The Macinstor 650 HCV requires very little desk space and is reliable, easy to use, and very fast.*

All things considered, I was very pleased with the Macinstor 650 HCV. Although the manual left a bit to be desired, most people using such a large hard disk would be experienced enough not to need the manual. The product's only other drawback is its price—about $7,500. For 650 megabytes on the desktop that's quite reasonable, though.

Product Listing
Storage Dimensions
2145 Hamilton Avenue
San Jose, CA 95125
Phone (408) 879–0300

Traveling Man:
A Lifestyle Report

Michael Costello

As an era commences in which floppy-based Macintosh operation poses an increasingly onerous burden, many users have entered the hard-disk market out of necessity. A choice for many is the external hard disk drive. Apple facilitated this choice early on, as Macintosh offered the first mainstream SCSI disk drive and the first standard SCSI port in the PC world.

Several benefits automatically accrue from the addition of an external hard drive. Floppy disks can be relegated to the dustbin of history. Most important, easily transportable hard disks permit one to take a customized Macintosh environment to any location featuring a Mac. In the inexorable march of technology, external hard drive capacities have increased while physical dimensions have shrunk. These developments are fortunat: a hard drive can never be too compact or too capacious. The statement "bigger is better" is tautological when applied to disk-drive storage.

Two recent disk drive offerings have taken the state of the art to the physical limit of 3-1/2 inch, half-height Winchester technology: the **Micro Tote** from Liberty Systems and the **Travel Pac** from Tallgrass Technologies.

Hardware Configuration

Each of these drives is based on the Quantum Pro Drive series, available in 40M and 80M versions. The mechanism is compact and features self-parking read/write heads—two important features for a drive which is intended for portable use. From this common foundation, the drives diverge in their design philosophy. While each drive is ultra-compact, radically different approaches determine each design.

The Micro Tote combines the Quantum internals with a power supply in an enclosure measuring 5"x8"x1-7/8". A fan is omitted, with cooling achieved by

a combination of conduction through the metal case and convective air flow through vents in the top of the case. The drive is intended to stand alongside the Mac. The back panel of the drive includes two 50-pin SCSI connectors, a power switch, a pushbutton SCSI ID selector, and a power plug.

The Travel Pac takes a radically different hardware approach. Instead of being powered with AC, this drive draws power from the Macintosh directly. The Travel Pac exploits the fact that the Macintosh floppy drive port has pins for +/–5V and +/–12V (used to power floppy disk drives). In theory, the Mac can deliver enough power through the floppy port to power modern compact drives. These drives need about 2 amps to start up. This design eliminates the need for a power supply in the drive.

The Travel Pac is 4-1/2"x7-1/4"x2" small. The drive is housed in a solid plastic case, with no vents or openings. With no power supply in the enclosure, the only heat is generated by the disk mechanism itself. Even so, the operating drive is warm to the touch. The back panel of the drive includes two DB25

SCSI connectors, a DIN8 connector for power input, and a rotary SCSI ID selector. The required cable consists of two separate cables whose jackets are fused together: a DB19 to DIN8 for power, and a DB25 to DB25 for the SCSI connection.

Included software

Private-label drive utility software is included with each drive. The Liberty software, Filelok, provides partitioning

features as well as standard formatting features. The Tallgrass software provides only minimal formatting features. Tallgrass does, however, include the somewhat dated third-party Disk Tools utility package.

Performance Report

Both drives were tested on a wide variety of systems, from the beige Mac Plus to the Mac IIcx. The Liberty drive worked well in all configurations, with one qualification. When the drive was used with the Plus, the Mac would intermittently deliver the dreaded "Cannot Load the Finder!" alert box at startup. However, the problem does not lie with the drive. On the contrary, the Quantum mechanism is one of the most reliable and one of the best performers among current drive offerings. This problem lies with Apple itself. Beige Macs usually have an early version of the 128K ROM which has well-known SCSI- handling difficulties.

Because of the drive's small size, some amount of dexterity is required when one operates the controls on the Liberty. The SCSI ID pushbutton is easily disturbed when the power switch is hit. (In this manner, I inadvertently witnessed the effects of a SCSI collision when my drive ID was set to 7, which is reserved for the Mac CPU. The desktop filled with about 20 or so hard-disk icons, until the Finder ran out of memory). The "fit and finish" level of the Liberty is lower than most other brands of external drive for the Mac. In all other areas, the Liberty was a fine performer.

> *A hard drive can never be too compact or too capacious.*

While the Tallgrass unit also provides fine service, its overall usefulness is severely hampered by design decisions predicated on false assumptions. Drawing power from the Mac CPU is a great idea in principle, but harsh reality intrudes in several key areas.

• The Mac Plus power supply is a marginal performer under the best of circumstances; sometimes it cannot support the startup current surge to spin up the disk. On such occasions, the Travel Pac fails to boot. On beige Pluses, the problem is insoluble, for reasons rooted in the machine's ROM. On newer Pluses, the problem can sometimes be overcome

• Not all Macs have external disk-drive ports (i.e., the Mac II/IIx). Tallgrass does make available an added-cost power adapter which routes power from the motherboard to a DB19

• Apple frowns on the practice of using its computers' power supplies for external hard disks. In the case of the Mac IIcx, which does have a floppy port, the power supply incorporates a current limiter which precludes the use of the Travel Pac in its intended manner. In fairness, it must be said that Tallgrass does offer a stand-alone power supply (at additional cost, and nearly the same physical dimensions as the drive itself), but that approach defeats the whole purpose of the ultra-compact drive.

The drive housing itself is sleek and made from durable Lexan plastic.

fer few amenities when their features are compared with those of competing drives. With compactness as the main selling point, these drives have little software beyond that required for their operation. No backup, spooling, or other utility software is included. The Travel Pac overcompromises in its quest for minimum volume, to the point that it is not usable in its base configuration.

Product Listing

Micro Tote
Liberty Systems
120 Saratoga Avenue, #82
Santa Clara, CA 95051
(408) 983-1127

Travel Pac
Tallgrass Technologies
11100 W. 82nd Street.
Overland Park, KS 66214
(800) 825-4727

Michael Costello, Meeting Director for BCS•Mac, bases his travels out of Hanover, NH.

> ## *The statement "bigger is better" is tautological when applied to disk-drive storage.*

connector mounted in one of the slot apertures. With this arrangement, the Mac II has plenty of power to start the drive, even with another drive mounted internally.

Conclusions

Both of these drives advance the art of very small external drives whose main utility comes in situations demanding maximum portability. Beyond this portability, however, the drives of-

May the Power

Jim Leitner

You won't believe this story. Maybe you will.

You may remember me from a few issues back—the one with the **Datadesk 101** keyboard, who might figure out what he should do with his Mac if he stopped fooling around making it "just right." Here's a little more about my Mac.

Although I lust for a IIcx, what I have serves me sufficiently. It's a 512 that has been up-graded, just enough to keep current with the ROM and RAM require-ments of the latest applica-tions and system soft-ware. I have assembled a double-height Tulin case around an 85 meg Seagate hard drive—it sits atop my storage cabinet, six feet away from my Mac. Hour for hour of use, I spend most time on the Mac doing telecommunications, so a modem figures integrally into my essential kit. It is a full setup, with some additional accessories, but I would have to admit, as an early adopter, that I have ended up with a kludgy, inelegant array compared to the sleekness you see these days on the pages of *Macworld* and *MacUser*. My Mac is special—read "a non-standard, unfair test environment."

That is character and physical setting; the time is summer. Think ahead to heat and air-conditioning and brown-outs. Now to the plot.

Last spring our beloved editor received an American Power Conver-sion Corporation **UPS 110SE** uninterrup-tible power source ($399 retail) for review. Simply put, a UPS is a battery and relay connected between the wall outlet and the things you want powered if the normal source goes out or if the

voltage drops. When summer hits my apartment and the air-conditioning comes on, I experience deja vu. You re-member the Deja Vu ads?

I had never lost data from a brown-out. But just about dinner time, after the air-conditioner had cooled the apart-ment from the day's sun and I'd sat down to a sysop/director's share of messages on the BCS•Mac BBS, the air-conditioner, on idle for a time, would kick in the compressor—not enough even to dim the lights. A click in my modem, and the phone connection was gone. Or the microwave at the other end of the apartment turned on—same result. Always in the middle of a download or the reply to a message. Gone.

I thought I had the problem licked for the summer. I would take this sleek package home, test it out, and solve my problem. Mr. Hunting said I had put my gloms on it. I admit to being gleeful.

The setup in my environ-ment just had to be arcane. The cords on this UPS are just the right length for an unadorned Mac. But getting my Mac, hard drive, and modem to connect to this unit took some jug-gling, albeit within the limits of the elec-trical load the UPS was designed to support.

I started by placing my hard drive on top of my Ergotron MacTilt. I put the UPS on that and the Mac on that. Two

problems. One was the leaning tower of power doomed to fall. The other was that both my Fanny Mac fan and the UPS 110SE wanted the AC connection on the Mac. Do away with either "tilt and swivel" or the fan that cools my Mac. No way.

I figured it all out by plugging the UPS

I started a Finder copy of a file and pulled the plug. My Mac and hard drive didn't skip a beat as the unit transferred to battery power.

---

into my hard drive, setting the drive on top of the UPS, and putting that assem-bly back on top of the storage cabinet. Then I plugged the modem and the Fanny Mac cord into a power strip that was connected to the UPS's plug and intended for peripherals. The Mac got its power from the now-protected Fanny Mac. After all, 120 volts AC is just that no matter where it comes from, but I wept for the swift demise I had rendered to hours of careful design engineering. The UPS 110SE is a sliver that in itself compromises neither the footprint or the lines of the unit for which it was designed.

Did it work? The simple test is to shut the power off, or pull the plug out of the wall. This is not the definitive test, but it is the basic test. I started a Finder copy of a file and pulled the plug. My Mac and hard drive didn't skip a beat as the unit transferred to battery power. The pages of convinc-ing technical documentation available for the unit detail multiple tests per-formed which are more sophisticated and demanding than my test, of course, and American Power Conversion has technical support to make sure you

have the unit that meets your needs. The SE110 is the baby of a very large and powerful family.

But for all its visual unobtrusiveness, the unit I used surely let it be known that it was around and working. The beeps made on startup and in the diagnostics and the sound issued when the battery is kicking in are loud. It is understandable that warning signals need to be heard. After all, a power failure of any kind is critical, and the unit must warn you so that you can power down your Mac before the backup runs itself down (10 to 20 minutes depending on the load). But for something that is designed to sit directly in front of you, some control over the volume would be nice.

Did it solve my problem? Well, no and yes and no. APC's technical support people informed me that my modem lacks proper voltage "regulation," which my Mac and hard drive have, so I am still seeking a solution for that problem. More than a few times I was working at my Mac and back-up power was indicated. Who knows what I might have lost? And then Fall came, and time to return the UPS. I disconnected it, happy only to get rid of one of my startup noises, but oh, no—deja vu! I hate deja vu! With the borrowed power source sitting in its box on the floor next to my desk, I worked nonstop one morning and afternoon to meet a face-saving deadline. Four pages of original and detailed text were completed. I selected all the text to change the font

for LaserWriter output and the screen went dark for a split second. Gone, unsaved, to bit-byte heaven. It can really make you wonder.

If you have an SE with an internal hard drive, or a Plus with a half-height external that fits under your machine, and you don't want ever to risk the loss of data from flaky power, the SE110 is a good bet.

Copyright © 1989, The Boston Computer Society Mac Group

Adobe Type Manager:
What You Get is What You See

Mary Jane Westland

Adobe Type Manager brings affordable outline technology to the Macintosh. This newly-released product has increased my productivity.

Why ATM?

Adobe Type Manager improves the rendering of type on screen and improves output quality on non-PostScript printers. The program solves problems like the 9-point type that can't be read on screen and the banner-size letters that print like a children's block alphabet on a non-PostScript printer. Now these type styles will have a different look.

ATM uses Adobe PostScript outline fonts. From them it interprets bitmap fonts to yield better screen rendering than Apple's built-in font-scaling routines do. The bitmaps are built from what Adobe calls hinted outlines rather than scaled from fixed-resolution bitmaps.

However, ATM cannot improve the quality of hand-tuned bitmap fonts.

Which Fonts to Install?

There's a separate outline for Roman (plain), bold, italic, and bold italic

styles. For best quality, copy each style into your system folder. The ATM manual recommends that you install only 10- and 12-point bitmaps for each font. An installed size of bitmap is used instead of scaling. Hand-tuned bitmaps will give you better rendering, especially for sizes under 18 point. Analyze your needs, experiment a bit, and install sizes accordingly.

I much preferred ImageWriter output produced with Roman, bold, italic, and bold italic styles installed. Having only the Roman style installed caused very loose spacing in programs that only support integer widths. The decision whether to install only the Roman-style bitmaps for each font family or to install each of the styles depends on your needs. However, make sure that size lists match for each style installed. If you installed 48-point Times but have Times Bold Italic only up to 24-point, your 48-point Times Bold Italic output to an ImageWriter is likely to be oblique, not truly italic—even if the screen looks correct.

Which Fonts Work with ATM?

Adobe Type Manager works only with Type 1 fonts—the PostScript fonts you buy from Adobe, Linotype, Agfa-CompuGraphic,

Monotype, and Autologic. Some of these companies sell other fonts that don't work with ATM. ATM won't work with the old Adobe copy-protected fonts, or with Varityper's copy-protected fonts.

Type 3 fonts, created by programs such as Fontographer, can't be used by ATM, according to Ivar Michelsons, Adobe's product manager for ATM, who presented the program at BCS•Mac's November meeting. Type 3 fonts lack the built-in hinting which ATM requires to render fonts at small sizes.

Currently, ATM can't use Bitstream fonts, either, although these are not Type 3 and are hinted. Michelsons says that Adobe is working closely with Bitstream to make the fonts fully Type 1 compatible.

ATM's Cost in Dollars, Time, Memory

Adobe Type Manager lists for $99 (street price is $57); this includes the printer fonts for the Times, Helvetica, Courier, and Symbol families. The **Plus Pack**, listing for an additional $198, consists of the rest of the fonts built into PostScript printers. Michelsons explained that Adobe could not include all 35 typefaces in the $99 package because of distribution costs, licensing fees, and royalties. Purchased one at a time, the families would cost up to $885,

At large sizes, Adobe Type Manager works beautifully. Here's 500 and 300 point New Baskerville at 72 dpi.

which makes the Plus Pack's cost seem very reasonable.

The first time Adobe Type Manager builds a bitmap of a particular font and size, there's a bit of a wait—longer, of course, on an SE than on a Mac IIcx. Once built, the bitmap is stored for quick access the next time that font and size are requested.

Adobe Type Manager's font cache is different from the RAM cache in the Control Panel. Your Mac's RAM is used by the system, the application, ATM's font cache, Adobe Type Manager itself, the RAM cache, and any INITs you have installed. If you only have one megabyte of RAM, you may need to adjust memory space to get things to work. Michelsons suggests allotting 50K to the font cache for every size font being used with ATM.

Won't Work with ATM

Applications which don't work with ATM include Fontastic Plus, Cricket Graph, LaserPaint, Word 1.x and Suitcase 1.0 (Suitcase II works fine). Some programs cannot make use of ATM's font rendering in all situations. Applications which do not use fractional character widths will not print evenly spaced output.

Adobe Type Manager improves the rendering of type on screen and improves output quality on non-PostScript printers.

Adobe Type Manager intercepts the call an application makes to QuickDraw to render a screen font, then displays a high-quality bitmap. If an application doesn't make a standard font call, or alters the bitmap after it's returned to

the application, ATM won't have a chance to work. In particular, ATM does not improve rotated text in FreeHand or MacDraw II, because QuickDraw cannot rotate objects. Instead, these applications take original bitmaps and perform the transformations themselves. The job gets done in anything but an aesthetic manner. Illustrator '88 version 1.9.3 uses a backdoor interface to let ATM render transformed text.

Adobe Type Manager's backdoor interface allows applications to get around some of QuickDraw's limitations. If an application sends the desired transformation to ATM, it will implement the transformation first, then generate the bitmap. Michelsons says Emerald City's TypeAlign will make use of this backdoor interface and display high-quality text on screen no matter what has been done to distort it. When Adobe publishes the specifications for ATM's interface, developers can upgrade their applications to take full advantage of the program.

Fractional Widths

For the best-looking output, an application should use fractional character widths. The FONT resource stores character-width information in full-point increments in the 72 dpi bitmap. The FOND's character-width tables store widths in fractions of points. It's not possible to display half a point on the screen. Consequently, typefaces rendered using fractional widths often look unevenly spaced on the screen but print evenly, because a low resolution monitor (72 dpi) is trying to approximate output on a higher resolution printer.

In particular, Microsoft Word 4.0 does not use fractional widths if you've chosen the ImageWriter printer. A correction to the fractional width problem is available from electronic bulletin boards. Claris is reported to be shipping an upgrade to MacWrite II that will allow it to use fractional widths. If you're stuck with integer character widths, you'll probably be happier with the resulting type if you use Apple's screen fonts rather than the Adobe's, notes Michelsons.

ATM uses Adobe PostScript outline fonts. From them it interprets bitmap fonts to yield better screen rendering than Apple's built-in font-scaling routines do.

On Mac screen: 9 point New Baskerville at 72 dpi magnified four times.

ImageWriter: 9 point New Baskerville at 144 dpi magnified four times.

LaserWriter II SC: 9 point New Baskerville at 300 dpi magnified four times.

ATM's Future?

We'll probably see many more usable ATM fonts. Adobe has announced plans to publish their Type 1 font format. Why they have taken so long to announce this, and why is it taking so long to release the information?

Adobe's credibility seems damaged. Advertisements depicting "unretouched photos" show tightly kerned output from a program that doesn't know how to kern. Other ads imply that ATM will improve ImageWriter output to the quality of LaserWriter output. Mr. Michelsons listened to complaints, reviewed Image-Writer printouts, and accepted both a little praise and a lot of criticism from BCS members before he returned to the West Coast.

It's too bad manufacturers get carried away with superlatives instead of stating the bare facts. It's time for Adobe just to listen. Let satisfied customers add the superlatives.

Copyright © 1989, Mary Jane Westland

Mary Westland is a graphic artist, trainer, and writer working in Southborough, Massachusetts. She can be reached at (508) 485-8461.

ATM: Another Look

Judging from the complaints voiced at our November meeting, it seems that members who have already purchased the Adobe Type Manager are disappointed with its performance in two areas: that ATM does not improve the quality of text output on an ImageWriter when applied to standard text sizes; and that ATM does not display bold type on screen at small sizes. Additionally, many users expected ATM to improve all their fonts, but ATM works only with Type 1 PostScript printer fonts.

The first disappointment stems from a misunderstanding. At best quality an ImageWriter has a resolution of 144 dpi. That allows only a fairly coarse image at 18 points or less. Since software cannot improve the ImageWriter's resolution, ATM will not make 10 or 12 point Times look sharper.

The second disappointment derives from ATM itself. When it rasterizes (or draws) a small font, it does not take into account the style of the font. When small fonts are hand-drawn, the strokes are artificially exaggerated. ATM does not do this. Therefore bold is often indistinguishable on screen from plain.

Having produced two issues of *The Active Window* using ATM, I find it to be the most useful, elegant and solid product released in 1989. It makes the Macintosh screen more WYSIWYG (what-you-see-is-what-you-get), and gives less expensive laser printers near PostScript quality text. All transparently. Without crashes or inconvenience. Just don't expect it to do the impossible.   —*Lee LeCuyer*

Copyright © 1989, The Boston Computer Society Mac Group

Edit

Home area code

⊙617 ○401 ○413 ○508 ○603 ○ [   ]

Volunteers:Volunteer Entry	

Name John Abreau JA	Needs Pass? Yes
Home phone **617** 784-9145	Team Awards
Work phone	Booth Vol?
Address 37 Glendale Road	Expert? Yes
	User Group Vol?
	Special Needs?
Sharon MA 02067	Accomodations?
	Shipping?
Latest time to call	Setup?
Contact	Cashier?
Notes VolBase? Yes	Entered 05/13/89

Add Entry
Delete Entr
Find - :
Alphabetiz
Booth Vols
Enter Shift

Figure 3. Clickable buttons for data entry.

program's unique elements. The key concept is the summary record, a temporary record used to hold summary information for display in the same table with the rest of the data. You create these records by using the Group command, which sorts the database according to the contents of the current field, inserts a summary record wherever the database changes value, and adds a record at the very end for a grand summary. Once this is done, special summary calculation fields can be added to total, count, average, or take the maximum or minimum of any field.

Each time the data is grouped on a different field, a new set of summary records is introduced within the groups established by the first sort. For example, if you have a database of people living in three states and in 15 towns within those states, grouping on the state field would create four summary records (one for each state and a grand summary record at the end). Grouping again on the city field would create 15 new summary records distributed among the different states.

This repeated grouping establishes a hierarchy within the data which Panorama exploits in an interesting way. Called data outlining, the feature permits you to collapse data as if it were in an outline processor. You can view summary information without looking at all the data's details.

As a rule, spreadsheets do and databases don't create charts. In this regard, Panorama does not disappoint: it offers bar, line, pie, and area charts as well as scatter diagrams. This feature is only useful, however, if you have in some way restricted the data set, either by selecting a subset or by grouping and then collapsing. Panorama will not attempt to create a chart unless it can squeeze all the data points into the chart area.

Cross-tabulation

Panorama can also create cross-tabs; this feature alone might make the product worth buying. Cross-tabs are charts which distribute data across two fields at once. The simplest type of cross-tab lists the categories for one field across the top of a grid and the categories for the second field down the left side; the table itself contains the frequencies of data elements which share a given pair of values (see Figure 4). Cross-tabs compress a lot of information into a small amount of space.

Databases are very powerful tools, but only to those who know how to use them. To make applications derived from them useful to ordinary mortals, common tasks must be automated. Panorama has a powerful macro language to accomplish this. Once created, a macro can be invoked from a special Script menu, from buttons on

the form itself, or from the keyboard through user-defined command keys.

Text Tools

Panorama is particularly rich in text-manipulation tools, with no less than a dozen text functions supported. But this is just the beginning. Panorama supports funnels—a miniature text-processing environment reminiscent of the GREP tool of Unix systems. Programmers can use funnels to dissect text in one field and recombine it to create other fields.

Every program worth its salt must have a least one neat feature thrown in by the programmer just for fun. Panorama has two: flash art and flash sounds.

Flash art is a separate picture database, within a given Panorama application, which lets the user store an image once for repeated use. For example, a restaurant database might contain

> **Every program worth its salt must have a least one neat feature thrown in by the programmer just for fun. Panorama has two: flash art and flash sounds.**

a field holding one to four stars. Any Macintosh database with graphic fields could support this, but each picture would have to be pasted in by hand as needed. The flash-art picture is not a field in the database proper but an object on the form. The image that appears on the screen is determined by a key field in the database assigned when the form is created. In the restaurant database, that field could be the restaurant's rating. If the contents of the rating field changed, the flash art graphic would automatically be updated. If a flash sound were included in the form, a tone could sound for each star.

MultiFinder Problems

Panorama has problems with MultiFinder. Some features, like manipulating objects in a form, simply do not work well until you relaunch under Finder. Sometimes, when shutting down under MultiFinder, Panorama simply refuses to quit—an admirable quality in people but not in software. The program also seems to have more than its share of screen-refresh problems.

Perhaps its most unnerving behavior occurs on returning from another application under MultiFinder. Every now and then the cursor goes dead. I always recovered by hitting the tab key to advance to the next field, but this behavior makes me nervous. On at least one occasion, Panorama refused to remove summary records. You quickly learn to be very careful about saving when using the program.

Panorama will probably never replace FileMaker as the database of choice for simple personal and business applications. Where FileMaker is simple and clean, Panorama is busy and cluttered. If the target market for FileMaker is the home business, Panorama is aimed at people who need more and are willing to work for it. It

Figure 4. Two-way cross-tabulation in Panorama.

may be the database of choice for programmer types who don't need a fully relational database.

Though the manual is a pleasure to read and is chock full of illustrations, Panorama is not for the new computer user with no database experience. But those with a technical leaning who can tolerate its idiosyncrasies will find it a powerful environment that's a lot of fun to work with.

Copyright © 1989, The Boston Computer Society Mac Group

Glenn Hoffman is Director of Special Events and Volunteers for BCS•Mac. He managed 160 volunteer shifts at Macworld Boston last August with Panorama.

Desktop Presentations *Fall Short*

Glenn Rosen

I've had it up to my mortarboard with desktop presentation software. It's one thing for business people to use the Macintosh to prepare for lectures, but academics who distribute their work with desktop presentations may as well collect their retirement early. Sure, we lecture and we publish, but unless or until scientific software lets us share data more easily, the information being presented won't be useful because it can't be distributed. Software vendors need to tailor desktop presentation software for the academic community.

Using desktop presentation packages such as **PowerPoint** or **CA-Cricket Presents**, I can put together a series of text and graphics slides for a lecture. Unfortunately, graphs can't be exported as PICTs to be manipulated in a drawing program. If these graphs are meant only for the slide viewer, then why all the drawing tools?

The graphs generated by statistical analysis programs can be printed, copied to the Clipboard, or saved as a screen dump. However, no single package for scientific graphing or statistical analysis will uniformly deliver publication-quality output. Packages which have a wide range of statistical tests as well as graphing features will not properly intersect the x and y axes at the coordinate 0,0 when the range of data points runs from negative to positive, or output discontinuous x or y axes. A visual inspection of data plots often is more informative than simply examining the results of a statistical test.

This is not to say that I don't want graphic capabilities in my statistical programs. But no matter how good the drawing tools provided by a statistical analysis program are, they can't match the precise controls available in a dedicated drawing package like **MacDraw II**. A 466K drawing package is simply going to outperform a 650K statistical analysis/graphics/drawing package.

Developers of insanely great software hear this: stick to what you do best. Take that which is unique and develop it fully, and grant that publishing software should make it easier to distribute information.
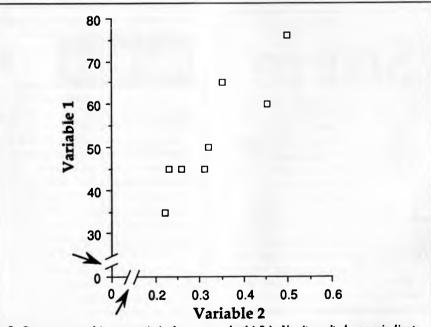
Copyright © 1989, by Glenn D. Rosen, Ph.D.

Q: *Can your graphics or statistical program do this? A: No, it can't. Arrows indicate discontinuity in the x and y axes. The ones here were added in MacDraw II.*

Academics who distribute their work with desktop presentations may as well collect their retirement early.

Presentation Software:
New Power and Versatility for Physicians

Eugene Rossitch Jr., M.D.

Physicians, particularly those practicing in academic centers, allocate a substantial amount of time to developing and giving presentations, which can range from lectures to medical students to the introduction of research data at national meetings. In addition, the physician is periodically responsible for presiding over grand rounds and other in-house conferences. Area hospitals often invite the university-affiliated doctor to lecture as part of a continuing medical education program.

Professional-quality slides can now be produced in-house.

Slides are the mainstay of most medical presentations. Until the advent of the personal computer and presentation software, few options were available to doctors—to anyone—who needed to produce slides. One usually had to settle for plain slides photographed from typewritten text. These slides were adequate, albeit not very stimulating. Later, as computer technology improved, slides could be produced by audio-visual departments. However, this was an expensive, lengthy, and sometimes unreliable procedure.

With the introduction of color on the Macintosh II, the door was opened for the development of good Macintosh presentation programs. Professional-quality slides can now be produced in-house. There are numerous advantages to making your own slides. First, it is much cheaper to make the slides in your own office, especially if you require a large number of them. Second, you can have a final product within 24 hours—a very attractive feature to those pressed for time (and who isn't?). By the same token, slides can be modified easily. Finally, by making slides yourself, you minimize the errors and misunderstandings that occur when an outside agent takes control of part of your work.

In my department at the Harvard Medical School, slides are designed with **PowerPoint**, version 2.00, on a Macintosh II. The slide-maker can choose from a wide selection of colors, font types, and font sizes. With **Montage**, PowerPoint files are transferred to Ektachrome 100 HC film. Montage presentation tools, ImageQ and Montage Imager, allow imaging of PICT files onto a Montage film recorder. ImageQ is a desk accessory that queues the PICT files for later, unattended imaging. Montage Imager sends the files created by ImageQ to the film recorder. The camera in the recorder is a high-quality 35mm device that comes with the package. Film and developing costs are approximately $10.00 for 24 slides.

Dr. Rossitch is a Neurosurgical Research Fellow at the Brigham and Women's Hospital, Harvard Medical School, Boston, MA.

Virus Protection
BCS•Mac Solution Disk

To meet the virus threat, BCS•Mac has assembled the first offering in a series of PD Solution Disks. The Virus Protection Disk, which may be ordered from the coupon below, is a startup disk which must be kept locked at all times. If you suspect that your system is infected, follow these instructions.

How to Use The Virus Protection Disk
• Reboot your Mac from your locked Virus Protection Disk.
• Run Disinfectant or VirusDetective on the disk you think is infected.
• Make a list of infected files.
• Remove the System and Finder from the infected disk.
• Remove all other infected files from your disk.
• Reinstall an appropriate system with Apple's Installer.
• Reinstall your applications from your locked original disks.
• Check all your floppy disks for infection.
• Check all backup disks for viruses.
• Inform your friends and co-workers that you have had an infection, so that they may check their disks.
• Once your system is clean, use Vaccine or GateKeeper to keep it that way.

How to Maintain a Clean System
At least once a month (once a week is better), every Mac owner should perform a basic maintenance ritual. Virus protection is just a part of this. Here's how.

• Have a clean, locked set of system disks and your locked Virus Protection disk available at all times.
• Keep your original program disks locked and stored in a safe place.
• Check for viruses at least once a week, and every time before you back up.
• If your disk is infected, disinfect it with your Virus Protection Disk.
• Back up at least once a month.
• Run a virus detector on every program you acquire before you use it.
• Upgrade your virus detection software each time a new version appears. Updates of the programs on your Virus Protection Disk will be available through the BCS•Mac Software Exchange Library.

- ✄ - - - - - - - - - -

Please send me

The BCS•Mac Virus Protection Disk

☐ I would like_____copies at @ $10.00 each, for a total of $_____ *(Price includes shipping and handling.)*

☐ I enclose a check payable to The Boston Computer Society

Charge it to: ☐ MasterCard ☐ VISA

Card Number:_____ Expiration date :_____

Signature:_____

Name_____ BCS # (mandatory)_____

Address_____ Phone ( )_____

City_____ State_____ Zip_____

November Disks
Jonathan Carpenter

Not long ago I received the sad news that Duane Blehm, author of the games Cairo ShootOut, Puzz'l, StuntCopter, and Zero Gravity, died in June 1988. Several of his programs were shareware which needed to be unlocked with a special keycode sent upon receipt of your shareware fee. Duane's parents have closed his company, HomeTown Software, and cannot fill any orders for the keycodes, nor can they provide program source code. However, unlocked versions of Cairo ShootOut! and StuntCopter are available on Update 5, and of Puzz'l and Zero Gravity on disk 161.

On behalf of BCS•Mac, I offer my condolences to the Blehm family.

BCS•Disk 166
BitByBit Create, edit, and modify ICONs. Includes some MacPaint-like tools.
Calligraphic A LaserWriter font in a calligraphic style.
Checkers Play checkers against the Mac, or have the computer play itself.
ClassicaHeavy A LaserWriter font.
Classicaltalic A LaserWriter font.
EarthQuake! Simulates a seismograph with mouse motion. Move the mouse sharply and watch the window.
Iceing A 72-point decorative ImageWriter font. No lower-case characters.
IsoBounce A three-dimensional one-player arcade game.
MacFlip Another Othello. Play against the Mac.
MaxFiles A nicely done desk accessory from Japan which includes many of the functions of the Finder.
ModernPrintBold A LaserWriter font for small headlines or bylines.
Occult Pick•It Your fortune based on several sources, including I Ching, Tarot Cards, and a Name Analyzer.
WatchCursor Changes the watch cursor. Yes, the hands still move.
WindowShade Reduce windows to their title bars when you want to clean up your screen. Conflicts with the buttons in some dialog boxes.

BCS•Disk 167
Cmdr. Dialog][Adds features to dialog boxes. Use keys to operate buttons, and cut, copy, and paste in text fields in dialogs.
LockDisk Lock and unlock a system disk, including a hard disk.
MandelZot 2.0 Explore the Mandelbrot set. Works on all Macs and in color on a Mac II.
Map fix INIT Makes the Apple's Map CDev work on 512K and 512KE Macintoshes.
MeltDA Your screen will appear to melt. No, it's not GSRs.
PICT Paint Combines the features of ResEdit with those of a color paint program. Create color PICT files and insert them into any resource fork.
Project Leader A simple project management tool similar in concept to MacProject.
ScrapSaver Saves the Clipboard file (aka the scrap) on disk on shutdown or restart.

SOFTWARE EXCHANGE LIBRARY

SCSI Tester Trace the phases of the SCSI Protocol on Macintosh hard disks. Use with caution.

Versal Font An ImageWriter font in 18, 36, and 72 points. Uppercase letters only.

XPRAM INIT Lets your 512KE use the sound CDev that is found the most recent versions of the system.

BCS•Update 8

Boomerang v2.0B81 Adds new features to Open and Save File dialog boxes.

Canfield v4.0 An update to the popular solitaire game.

Cards by Charles Haspel A color deck of cards for use in games like Canfield, Klondike, and Golf.

Cards by Rand K. Miller Another color card deck.

Golf v2.0 One of Michael Casteel's solitaire games. Very well done and very addicting.

Klondike v4.0 A solitaire game by Michael Casteel. Now has color on a MacII and allows you to use decks created by others.

ResEdit v1.3d1 Edit resources within programs, such as fonts, menus, dialog boxes, and window definitions. Documentation on BCS•Utilities L

BCS•Art T

Contains EPS image files. All files are Encapsulated PostScript files for use with any of the major page layout programs such as PageMaker; they require a PostScript device for hard-copy output.

BCS•Stacks 77

Bird Anatomy–v1.2d An excellent stack describing the surface anatomy of birds. Great graphics and sound!

BCS•Stacks 78:

Bartender Learn how to mix drinks; add your recipes to this simple database.

Chinese Characters Learn to write and speak Chinese phrases.

Metronome An electronic metronome.

Stack To The Future Find the time in days and years between two dates. You can get the time until or since a particular day.

Weight Loss Calculate the calories per day to lose a given amount of weight.

BCS•Stacks 79

ChronoTrivia™ Demo Put a list of things in chronological order.

Convertor Converts units of measurement. Good interface; lets you add conversions to the stack.

EAYC! Calculate the time required to burn off calories with various exercises.

ElectroAquarium If you don't like cleaning fish bowls or feeding fish, this stack is for you.

Frame Everything a picture-framer should know.

Secrets of the Mac Experts All those tricks and techniques that make the Mac unique.

The Auto Stack A fine database of classic cars which can be used as clip art.

BEGINNER'S BIT

Sandra Sizer Moore

As my faithful fans will doubtless remember, my Mac sits on a table facing my harpsichord. Twenty-first century stares at seventeenth, mostly quite peaceably.

My Mac is a Plus, recently invigorated by a 30M hard disk. My harpsichord is a copy of a seventeenth-century Italian instrument; the original, built by De Quoco, is in the Smithsonian. (Yes, I've seen it and played it, thanks to some kind friends.) Its compass is just a mere five octaves; it's a single manual (Trevor Pinnock and other giants of the harpsichord world use big, often French, double manuals). Its voice is small but sweet. The inner case is eggshell-thin, made of olive wood; the keys are boxwood with skunktail sharps; the sound board is Sitka spruce, the wrest board, rock maple. The legs are turned and marbleized. It looks as beautiful as it sounds. I generally tune it once a week, depending on how humid the weather is. And I have discovered that I cannot have the Mac on when I'm tuning. Because the hum, even as quiet as it is, interferes with the electronic tuner I use to set the temperament.

The Pythagorean Comma

"The what you use to do which?" Ah, yes. Electronics penetrate even the esoteric world of the harpsichord. Tuning, you see, is not just a function of pitch. It's a mathematical series of relationships, with each succeeding note in the middle C octave (for instance) tuned at a certain distance from the previous note, or in relation to the fifth from C to G, or the third, from C to E, and so on. You understand perfectly, yes? No? You mean you've never heard of the Pythagorean Comma? Well, never mind. Just take my word for the fact that supposedly I have perfect (or maybe near-perfect) pitch, but with city noise, or if I'm tired, or if I have a cold, or whatever the case, and my ears aren't functioning too well, I check my tuning with this dandy electronic tuner. I generally use what's called Equal Temperament, because I'm playing a lot of different pieces in a lot of different keys, and I am not about to re-tune in between. I want to set a temperament that's going to sound as good for G Major as it does for b minor. And I've discovered that the Mac, peacefully whirring away, produces a sound that gets picked up by the tuner—also by my ears. With deepest regret, I have to admit that the two centuries can co-exist—as long as I don't try to have them both on at the same time. Big deal? Not really. Ironic, maybe.

Engineering Expertise

Ironic, because (for the benefit of those of you who have either forgotten or never knew) this keyboard instrument, even now, represents a very high technology item. Building one demanded—still demands—a knowledge of the properties of various woods and the effects of those properties on the quality of the sound the instrument would—will—make. The design of the case represents a high degree of acoustical engineering expertise. The length of the strings, and the material from which they are made, is critical to the sound. The bracing beneath the visible surface has to be, like the knees of a ship or any other such support system, of perfect integrity, lest the instrument warp or "cock." When I depress a key, it activates a jack, which holds in its upper part a quill (once crow, now delrin plastic), which actually plucks the string and produces the sound. The distance that this jack, which is a very small bit of wood and felt and plastic, has to travel to effect its small job is calculated with infinite care. And I do mean calculated. This is a mathematical equation.

Handy Work

The amazing thing is that all this calculating was done without a computer. People who make harpsichords today have more accurate measuring devices, but the building is still done by hand. Further, there is, even today, a great deal of maintenance on a harpsichord that must be done by hand. If a string breaks, it has to be replaced by hand. If a quill wears down, its replacement has to be carved by hand. When the instrument needs tuning, guess who does what with the tuning hammer, and how? And so on.

And while (I hope!) you're going "Ooooh, aaaaah!" please remember that Bach and Mozart were both first-rate mathematicians. That's one of the reasons their music is so wonderful. (I am not going to talk about genius here. I'm talking techie—seventeenth- and eighteenth-century techies. I bet they both would've loved having Macs around! And MIDI would've been a great joy!)

What's the point in writing about harpsichords and computers? Well, think about the similarities: bits and bytes and parity aren't all that different from quarter notes, half notes, trills and mordents. BASIC and COBOL are not so very different from the musical language—with its precise grammar and syntax—of Bach and Mozart.

Feel free to compare Bitstream fonts to Adobe's.

Absolutely free.

Right now, Bitstream is offering anyone who has
purchased an Adobe® font a free Bitstream® typeface family for the
Macintosh® One that Adobe doesn't offer.* A $180 value.
Plus a typeface that Adobe does offer, so you can compare. The design. The
character spacing. The kerning. And the overall quality.
We think you'll like what you see. And the fact that Bitstream offers the largest
library of typefaces for both Adobe PostScript® printers
and clones. In fact, hundreds more faces than Adobe. Naturally,
an offer this good is valid for a limited time only.

Call 1-800-848-8220 ext. 619 for your free typeface.

Bitstream